REPORT

OF

CLINICAL CASES

TREATED IN THE

SURGICAL WARDS OF THE ROYAL INFIRMARY,

UNDER THE CARE OF

MR SPENCE,

DURING THE SESSION 1862-63.

BY

ARTHUR G. REID, M.D.,

LATE RESIDENT SURGEON.

EDINBURGH: PRINTED BY OLIVER AND BOYD.

MDCCCLXIV.

REPRINTED FROM THE EDINBURGH MEDICAL JOURNAL, APRIL AND MAY 1864.

REPORT OF CLINICAL CASES

TREATED IN THE SURGICAL WARDS OF THE ROYAL INFIRMARY DURING THE SESSION 1862-63.

The following pages contain an account of the more important cases treated by Mr Spence in the Surgical Wards of the Royal Infirmary during the session 1862–1863. They have been classified under the following heads:—Injuries of the Head; Tracheotomy; Amputations; Excisions of Joints; Tumours; Wounds; Fractures; Diseases of Joints; Diseases of the Urinary Organs; and Hernia. A few cases, which come under none of these heads, are grouped separately.

Injuries of the Head.

W. F. was struck with a baton, and sustained an incised wound, two and a half inches long, over the sagittal suture. He was insensible for a few minutes. Hair was cut short. Rest, tepid-water dressing, and zinc lotion produced a cure in three weeks.

P. M'I. was struck on the forehead by a "putting-stone." Wound about two inches long, down the centre of the forehead. Symptoms of concussion, which lasted half an hour. Hair cut short; cold to the head; tepid water and zinc lotion to the wound; purgatives and low diet. A blister was applied on the tenth day, in consequence of the pulse becoming quick. He was dismissed cured, a month after admission.

W. M'M., falling from a height among some stones, received a wound over the occiput an inch and a half in length. Tepid-water dressing was applied to the wound. On the fifth day erysipelas set in. He was placed in the private ward; the hair was cut short, and the head completely enveloped in cotton wadding. This treatment, combined with the occasional administration of salines, effected a cure in ten days.

P. M'D. was struck by a pewter pot, which had been hurled at him. It inflicted a stellate wound over the left frontal sinus, and caused depression of the outer table. Silver sutures were employed

to retain the skin in position. Tepid-water dressing, zinc lotion, salines internally, and leeches behind the ear on the fourth day when the pulse became slow, produced a cure in three weeks.

David C., admitted 23d December. While in a state of intoxication, he fell from the top of a loaded cart, and received a severe wound of the scalp. The incision extended from the left frontal eminence to the middle of the occiput. The scalp was detached from its connexions, and turned down over the ear, leaving a considerable surface of bone exposed. A stream of tepid water was directed over the wound, to wash away the mud and filth. The edges were then brought into accurate apposition by silver sutures; the head was shaved, the bowels freely opened, and low diet enforced. Although this patient was an old soldier and an habitual drunkard, he recovered without an unfavourable symptom.

Mrs C., aged 60, fell down a flight of stairs, and was picked up insensible. On admission, she was comatose; the pupils dilated; the breathing slow and stertorous; the pulse 30. Cold was ordered to be applied to the head; an enema was administered; and a drop of croton oil was given by the mouth. The patient remained insensible for three days. After this date there was a gradual, though only partial, return of her senses, and she has remained permanently imbecile. The pulse never rose above 50.

G. B., a young, stout, and healthy cabman, was admitted on the 29th January. When standing on the pavement of the High Street, a brick fell from the roof of a house, and inflicted a very severe compound comminuted fracture of the cranium. By the injury he was rendered a little giddy, but not insensible. On admission, the general symptoms were far from being alarming; the pulse was 72, and natural; the pupils equal and contractile; the skin warm; and the respiration normal. The fracture was situated over the posterior extremity of the sagittal suture, and extended about an inch transversely and longitudinally. It was accompanied with marked central depression. There had been a slight amount of hæmorrhage, but it had almost entirely ceased. Chloroform was administered, and the incision in the scalp extended. A small fragment of bone, which was completely detached, was removed, and the bone-pliers were introduced through the opening, so as to divide the denuded and depressed pieces, and allow of their being either elevated or withdrawn. The inner plate was found to have been splintered. The smaller fragments were easily taken away; but one large, shelving portion had to be divided by the pliers previous to removal. As this latter spicula had been driven into the longitudinal sinus, a gush of blood followed its withdrawal. The jet was easily checked by the pressure of a finger until the wound was thoroughly searched, and all loose particles removed. A small piece of lint was then placed directly over the wound in the sinus, and above it larger pieces, until the whole space was lightly filled. This sufficed to check the hæmorrhage. The patient was replaced

in bed, and iced water kept constantly applied to the head. Next day all the pads were removed, except the one in direct contact with the bloodvessel. In the evening a saline purge was given; and as the pulse had risen from 84 to 100, he was put on small doses of tartar emetic. On the third day, a small fragment of bone, which pressed directly inwards on the brain, was removed by the pliers. During the third and fourth days, the pulse varied from 80 to 88; the mental faculties were intact; and the general appearance of the patient augured well. On the sixth day, however, he had slight rigors, and the pulse rose to 112. Leeches were placed behind the ears; and on the seventh day the pulse numbered 92. In consequence of the pulse rising to 100 towards evening, a blister was applied between the shoulders. On the morning of the eighth day he wandered, the rigors and sweats were repeated; in the afternoon he became comatose, with paralysis of the left arm and leg, and marked dilatation of the pupils. The coma gradually deepened, and he died on the evening of the ninth day after receipt of the injury. On examination, the bone around the wound was smooth and healthy; but, underneath the dura mater, a diffuse collection of pus covered the right side and base of the brain. A small abscess was found in the posterior lobe. The longitudinal sinus was completely occluded by a large fibrinous clot.

Mrs I. was knocked down and run over by a cab on the evening of the 10th March. She received the following injuries:—a wound over the centre of the occiput, about an inch and a half in length; a severely lacerated wound of the foot, whereby the pad of the heel was thrown forwards; and many bruises over the face and chest. She was delirious, and rambled in a high tone; the pulse numbered 92; the pupils were small, but equal and contractile. The wound of the foot was brought together by silver sutures; the head was partially shaved, and cold applied. The next day the pulse rose to 130; leeches were applied behind the ears. In consequence of her greatly excited manner preventing sleep, she received a draught of morphia on the third day. On the fourth she was more composed, recognised her friends, and for the first time complained of pain in the head. She relapsed into delirium on the fifth day; and as the pulse, which continued quick throughout, became also weak, stimulants were tentatively administered. On the seventh day the prostration increased, the coma deepened, the pupils became dilated and uncontractile, and she sank about 10 P.M. Shortly before death a child about the seventh month was born. On post-mortem examination, a large clot of blood was found covering the posterior surface of the brain, and in the substance of the organ itself there were several patches of effused blood. The occipital bone was split down the centre, but without the slightest displacement being produced.

A. L., aged 27, admitted 30th September, with the following history of his case from Dr Ballantyne of Selkirk:—"The bearer received a

kick on the forehead from a horse, which produced a compound comminuted fracture of the cranium. When first seen, he was in a state of deep coma, and two of the fragments were depressed upon the brain. On removing them, the inner table was found to have been splintered into numerous fragments. These were carefully picked away, so as to avoid injuring the dura mater, which was intact. Some of the more threatening symptoms immediately disappeared, but the unconsciousness remained for several days. The head was shaved, cold water constantly applied, and the bowels freely moved. On the second day he was largely bled and freely purged, in consequence of the pulse becoming more slow and full. Next day the pulse rose. During the succeeding fortnight the consciousness slowly returned; but he was accustomed to have relapses at night, with involuntary micturition. About the end of the first week the dura mater sloughed; thereafter a fungus appeared, and slowly increased, notwithstanding a variety of treatment. At intervals, portions of the fungus have sloughed away, but have been speedily replaced by fresh projections." On admission, the patient had not a single head symptom; the general health and appetite were excellent; the pulse between 70 and 80. A little above the right eyebrow there was a prominent, pulsating tumour, about the size of an ordinary apple. Pressure upon it did not produce any cerebral disturbance. The treatment up to the 9th October consisted of gentle aperients internally, along with red lotion locally applied. At this date the edges of the wound were brought into partial apposition by strips of plaster, and the red lotion was changed for other stimulating applications. Under this treatment the tumour steadily increased; all attempts at forcible repression were stopped on the 28th October, and the lotions alone continued, so as to stimulate the process of cicatrization. From that time the contraction of the skin and the diminution of the growth went on rapidly, and on the 30th of November the space left exposed could be covered by a shilling. On that day he absconded.

J. G. was knocked down a flight of stairs. Falling on his side, the left temple struck against one of the steps, and received a very severe bruise, with great subcutaneous extravasation of blood. He also sustained a fracture, which commenced in the parietal bone and extended through the base of the cranium. The patient was comatose; the pupils dilated and immobile; the pulse slow and weak. There was bleeding from the ears and nostrils. The head was shaved, cold applied, leeches behind the ears, an enema administered, and mustard sinapisms placed on the epigastrium. He only lived twenty-four hours.

Remarks.—Wounds in the scalp are more dangerous than in other regions, from their close proximity to the cranial contents, which may either be involved at the time of the accident or at a future date; also from the unequal vascularity of the scalp-textures leading to the risk of sloughing of the fibrous aponeurosis, if erysipelas supervene.

The danger is greatly increased when the bone is exposed and loses its vitality, or when it dies from suppuration occurring beneath the pericranium, thereby depriving the external table of one of its sources of nutrition. The process of inflammation must then take place in the diploe, in order to separate the exfoliation; and from the free anastomosis in this structure, between the meningeal vessels and those of the scalp, the inflammatory action is apt to spread by direct continuity to the interior of the cranium. This unfavourable result is much more liable to happen when the bone perishes throughout its whole thickness, as there is then a certainty of suppuration between the membranes and the cranium. Small scalp-wounds, like those of W. M'M., W. F., P. M'I., are very difficult to deal with. The patients, not crediting the risk incurred, pursue their usual avocations, and partake of their ordinary indulgences. Many escape; but where the constitution is unhealthy, or the habits intemperate, the penalty is often paid; for after going on favourably during the first eight days, or even three weeks, the wound becomes dry and glistening, the patient's manner more irritable, there is a succession of rigors, the pulse rises and is hard, the eye is brilliant and wild, he wanders, and passes into delirium.

Success in the treatment of scalp-wounds depends greatly on their proper management at first. The wound ought to be carefully cleared of all filth by a stream of tepid water, the hair around it shaved, cold constantly applied to the head, the patient kept quiet in bed, put on low diet, and the bowels freely moved. If the skin has been reflected, as in the case of D. C., it ought to be brought into position by points of silver suture. Sutures have been objected to, as tending to produce great irritation, and the objectors either prefer compress and bandage, or leave nature to bring the parts into their proper site. Bad results will not arise from the use of silver, or even of thread sutures, if they are withdrawn on the first signs of irritation; whereas the employment of a compress and bandage implies the collection of the discharge, the frequent change of the dressing, and the infliction of a considerable amount of daily pain and mental excitement. Again, if the scalp is allowed to hang down, it becomes thickened and everted, the process of contraction is tedious, and the uncovered bone is very liable to exfoliate. D. C. was treated in accordance with the principles above laid down; and although the wound was most extensive, the bone bare, and the patient an old drunkard, he went on most favourably, union taking place by the first intention; there being no head symptoms or exfoliation. If erysipelas occur, as in the case of W. M'M., the patient should be separated from his companions, the head wrapped in wadding, and salines administered.

Among the fractures of the cranium are examples of two of their most serious accompaniments, namely, a wound of the longitudinal sinus, and a true hernia cerebri. In G. B., primary head-symptoms were trifling, while in A. L. they were so serious as to threaten

life. In the latter, operative interference was necessary to relieve the urgent symptoms of coma, while in the former it was undertaken with the view of diminishing subsequent risks. The absence of concussion in G. B. is accounted for by the vault of the cranium having been struck by one of the angles of the brick, which, readily penetrating and fracturing the bone, prevented the transmission of shock either inwards or towards the base. To place this patient in the condition most favourable for recovery, it was essential to remove the denuded and separated fragments, which were certain to die, and by their irritation lead to cerebral inflammation. There was also another reason for immediate interference, on account of the fracture being placed directly over the longitudinal sinus, and the possibility of that vessel being wounded. This supposition proved correct, for a large jet of blood followed the withdrawal of one of the sharp spiculæ which had perforated the coats. The hæmorrhage was easily checked, temporarily by the finger of an assistant, and subsequently by a few graduated pieces of lint placed directly over the wound. Cases of recovery after equally severe injuries are on record; but the dangers to be encountered are numerous. The patient sank on the ninth day under one of the most common sequelæ—acute inflammation of the brain and membranes. In A. L. the usual predisposing cause to hernia cerebri was absent; there was no formation of pus in the substance of the brain, increasing its bulk, and forcing the superficial layer through the space where counter-pressure has been destroyed. In this case, the pulsatory movements of the cerebral vessels sufficed to push a small portion of the brain through the point of non-resistance, which was afterwards increased by the super-addition of lymph. Slicing this form of hernia would have been unnecessary, dangerous, and insufficient to prevent its recurrence. As it was impossible to obtain an osseous protection, the treatment was directed towards promoting the cicatrization of the skin, which, growing over the tumour, might protect it, and by the pressure of the contracting cicatrix, might lead to absorption of the lymph and diminution of the bulk. These processes were going on most favourably, and the tumour was much diminished in size, and almost completely covered by skin, when the patient absconded. In P. M'D. the depression was situated over the frontal sinus, where the tables are widely apart. As the force with which the pot was thrown was not great, and as the instrument was not pointed, the inner table was considered to be intact. The treatment was similar to that of a scalp-wound. The case of Mrs I. is an instance of an apparently trifling head-injury terminating fatally, and shows that, although the wound is small, the bone covered by periosteum, and not in the least displaced, a very extensive fracture may be present. The symptoms led to the belief that there was a large clot of blood pressing on and irritating the cerebrum, keeping up the general excitement, and leading to further passive hæmorrhage. The usual remedies had no effect in

allaying the head-symptoms, and as a state of mental excitement is attended with the greatest danger, an attempt was made to soothe it by the cautious administration of morphia. This drug has been excluded by some surgeons from their list of remedies in head-injuries; but if combined with antimonials, and given in cases similar to that of Mrs I., the benefit to be derived from its use much more than compensates for the disadvantages. Mrs C.'s is a painful example of those chronic changes within the cranium which occasionally occur, after compression, in a person addicted to stimulants, and end in imbecility. The treatment had little effect. It consisted of repeated blisters, and finally, a seton was inserted in the back of the neck.

Tracheotomy.

1. Ann A., æt. 2½, admitted December 4, suffering from diphtheria, with severe laryngeal symptoms. She had been ailing about a week, but the dyspnœa only became urgent the day previous to admission. As the paroxysms were frequent, and the breathing greatly impeded, the trachea was opened. Immediately after the operation, the patient fell into a quiet sleep. She went on most favourably; the tube was removed on the fifth day, and she breathed freely through the wound. On the eighth day the wound became dry and grey; on the tenth a slough separated. The constitutional symptoms accompanying this attack of sloughing phagedæna were of a very low type. She died on the eleventh day. The local treatment consisted of the application of strong nitric acid, with chloride of soda, and very weak Condy's solution. Stimulants and nourishing food were given, both by the mouth and rectum.

2. Isabella R., æt. 2½; admitted 5th December. Suffering from croup in an advanced stage. Tracheotomy. Two days after the operation, the breathing became impeded; the tube was withdrawn, and several large pieces of false membrane extracted. This was followed by relief. On the following day the dyspnœa returned. The membrane had now extended beyond the reach of forceps, and the patient died asphyxiated.

3. John C., æt. 3; admitted 5th January, labouring under diphtheritic croup, accompanied with extreme dyspnœa. Tracheotomy. Dismissed 30th January. Cured.

4. Duncan M'L., æt. 4; admitted 9th March. Croup. Tracheotomy. Recurrence of the dyspnœa. Died, 12th March. On post-mortem examination the false membrane was found extending along the larger bronchi.

5. David N.; admitted 20th May. Croup. Tracheotomy. Died, 23d May. False membrane found in the bronchi.

6. Alex. F., æt. 3; admitted June 1st, suffering from extreme dyspnœa. Diphtheria. Tracheotomy. After the operation, he had repeated attacks of convulsions, with squinting. Dismissed 30th June. Cured.

7. J. S., æt. 3½; admitted 8th June. Croup. Tracheotomy. Died, 11th June.

8. J. B., æt. 4½; admitted 12th June, with great dyspnœa. The whole of the fauces covered with false membrane bled when touched. Tracheotomy. This patient went on most favourably until the 20th. Symptoms of paralysis of the pharynx and glottis occurred. She was fed by the stomach-pump twice daily, and by enemata. The prostration, however, increased, and she died on the 26th June.

9. William J., æt. 38; admitted 14th May, suffering from a paroxysm of intense dyspnœa, with which he had been seized, while on his way to the surgical hospital. He was under Mr Spence's care about a month previously on account of syphilitic ulceration of the larynx, which improved under local and constitutional treatment. He left the wards, promising to return whenever the dyspnœa recurred. Two days previous to admission, he had several attacks, but on the 14th they were worse than he had ever previously felt. As the patient was in a most dangerous state, and the disease evidently advancing, tracheotomy was immediately performed. After the operation, he had not an unfavourable symptom. Dismissed 30th June, still wearing the tube, which did not cause him the slightest inconvenience; when he closed it with the finger, he could speak more distinctly than he had done for months previous.[1]

Remarks.—Although the results of this operation have not been so successful as in former years, they still tend to confirm the opinions expressed of it in preceding reports. All the patients who were operated on for croup or diphtheria had been subjected to the usual medical treatment, previous to their admission into hospital. The diseases had, nevertheless, advanced to the last stages; the symptoms were increasing in severity, and the almost certain result would have been death within a few hours. Two were rescued from this fatal termination; life was prolonged in all, and death rendered more easy. In A. F., the false membrane formed below the tracheal opening, and led to such serious dyspnœa, that the tube had to be withdrawn, and the trachea cleared of the deposit as thoroughly as possible. The patient was a very stout, healthy child, and was able after the second day to cough up the membrane through the tube. He was repeatedly placed in a hot bath, on account of several attacks of spasmodic dyspnœa; great relief was experienced, and he slept quietly for hours afterwards. As a certain amount of thickening continued in the air-passages beyond the usual period, the tube could not be completely dispensed with until the beginning of the third week. John C. was, likewise, a stout healthy child; he had not a single unfavourable symptom after the operation.

[1] In addition to the above cases of tracheotomy, three cases, accompanied by urgent dyspnœa, were operated on by the resident surgeon. All died.

Although the primary effects of diphtheria are completely cured by the operation, the patient may perish from one of the sequelæ. There are examples of death from this cause in Ann A., and J. B. The first died of hospital gangrene, which attacked the wound eight days after the operation. The second died of asthenia, produced by inability to swallow, in consequence of paralysis of the muscles of the palate, pharynx, and epiglottis, which allowed the food to pass down the trachea, from whence it was coughed up through the tracheotomy tube. I. R., D. M'L., and D. N., perished asphyxiated, from the false membrane spreading down and occluding the bronchi. J. S. was a very weak, unhealthy child; she breathed freely up to the last, and died of exhaustion. Had it not been for the great relief experienced from the use of steam-inhalation, iodide of potassium and tonics, the operation would have been performed on W. J. at an earlier date, so as to have guarded against the risk of a sudden paroxysm of dyspnœa. When the diseased parts were set at rest, the ulcers healed up, and the distinctness of the articulation was wonderfully improved.

Amputations.

PRIMARY AMPUTATIONS.

Shoulder-Joint.

1. J. C. was admitted in a state of great prostration, due to a severely compound comminuted fracture of the humerus, with the limb almost severed from the trunk; a dislocation of the right hip; and a very severe wound of the dorsum of the foot. As the chief laceration of the tissues was on the inner surface of the arm, amputation was performed by a long antero-posterior flap cut from without. Died twelve hours after admission.

2. John L., æt. 66. Compound comminuted fracture of the arm and fore-arm, the result of a railway injury. The patient had come from a distance, and had lost a large quantity of blood. Amputation by a long external, and a short internal flap cut from without. He sank next day.

Arm.

1. John R., æt. 12, was admitted with a compound comminuted fracture of the fore-arm, great laceration of the soft parts, and an opening into the elbow-joint. Amputation was performed a little above the elbow by a long external flap. In consequence of the bone being stripped of its periosteum, it was necessary to continue the dissection up to the middle of the humerus, where the membrane seemed to be adherent. This patient, who laboured under aortic and mitral disease, was for three days in a state of delirium, and very prostrate. He slowly rallied, and the stump healed, with the exception of a small point near the centre, through which the lateral surfaces of the bone could be felt bare. Two months after

admission, the cicatrix was partially laid open, and the sequestrum removed by means of necrosis forceps. It comprehended the whole shaft as high up as the surgical neck of the humerus. Thereafter the wound united completely. A shell of bone was left of sufficient firmness to maintain the shape of the stump; this has been subsequently strengthened, and now feels perfectly strong.

Fore-arm.

Thomas C., æt. 18, had his hand and the lower part of the fore-arm severely crushed, lacerated, and fractured, between pinion-wheels. Amputation by double flap through the middle of the fore-arm. Recovered.

Wrist.

Thomas C., æt. 14, admitted with a lacerated wound of the hand, opening into the carpo-metacarpal articulation. Amputation was performed through the wrist-joint, by two semilunar flaps cut from without, the extremities of the incisions terminating a little below the apices of the styloid processes. The wound healed rapidly. The power of pronation and supination was unimpaired. The stump continues excellent.

Thigh.

Wm. G., æt. 30, was knocked down by a railway-waggon, which passed over both his lower limbs. The right thigh was fractured in the lower third; the soft parts were considerably bruised, and there was enormous swelling from extravasation of blood into the textures of the limb. The leg was cold; no pulsation could be felt in the tibial vessels. The left leg and thigh were likewise much bruised and slightly lacerated. Amputation was performed through the upper third of the right thigh, by anterior and posterior flaps. A portion of the muscle in the stump sloughed; the ulceration extended towards the femoral artery, and on the 9th day opened into that vessel a little above the ligature, which remained attached. On raising the stump and applying cold, the hæmorrhage ceased; but it recurred six hours thereafter. Mr Spence then cleared the vessel from the surrounding tissues, and applied a ligature above the bleeding point. The sloughs separated; the wound looked healthy, and partial adhesion occurred; but matter formed extensively in the left thigh and leg, and, under this profuse discharge, the patient sank in the fourth week.

2. John B. A loaded waggon passed obliquely over his right thigh, fractured the external malleolus and astragalus, and caused great extravasation into the textures of the leg and foot. At first it was thought possible to save the limb, but by the following day it had become quite cold and perfectly numb. As it was impossible under these circumstances to amputate with safety below the knee, the operation was performed through the lower third of the thigh by the long anterior flap. Recovered.

Leg.

1. J. M'C., æt. 33. Compound comminuted fracture of the leg communicating with the ankle-joint, resulting from a railway-truck having passed over the limb. Amputation below the knee by long internal, lateral, and short external flaps, cut from without inwards. There was not the slightest tendency to the projection of the margin of the tibia; the recovery was rapid and complete.

2. C. C., æt. 73, was knocked down and run over by a loaded van. The chief injury sustained was a compound fracture of the leg, for which amputation below the knee was performed by the long posterior flap cut from without. She had been a habitual drunkard for years, and was intoxicated at the time she sustained the injury. The wound remained in a very inactive state, the discharge being thin and serous. She died on the sixteenth day after admission.

3. J. M., æt. 25. Compound comminuted fracture of leg and ankle, resulting from a railway-waggon passing over the limb. Amputation by a long posterior flap. Recovered.

SECONDARY AMPUTATIONS FOR INJURIES.

Arm.

G. G., æt. 17. While leading a horse by the bridle the animal seized the fore-arm, and inflicted a compound comminuted fracture. He was under treatment for ten days previous to being sent to hospital. Conservative measures were tried, and a fortnight after admission, several pieces of bone were removed. Under the prolonged discharge from the wound, and from the ulcers which had formed over the sharp prominences of the condyles, his general health became impaired. The inflammatory action extended towards the wrist, and in the fourth week suppuration occurred within the joint. Under such circumstances, there could be no hesitation in removing the limb. The operation was performed below the middle of the arm by a long external and short internal flaps formed by transfixion. Recovered.

Thigh.

1. M. J., æt. 16, while running from a ram, tripped, and fell. Her right limb lay across a narrow drain, and against it the chief violence of the animal was directed. The butting against the knee was so severe as to separate the external condyle, and at the same time cause great distortion of the joint and extravasation of blood into the surrounding textures. At first the knee-joint was thought to be dislocated, and attempts were made to reduce it. She was sent into hospital next day. The limb was placed in a wire splint, and fomentations applied to the joint. For about three weeks the patient went on favourably, but the soft parts began to slough and the joint was ultimately opened into. Thereafter,

acute synovitis set in, accompanied with irritative fever and profuse unhealthy discharge. In the beginning of the fifth week, the symptoms assumed a hectic character. As the patient was evidently fast sinking, and as her only chance of life was amputation, the limb was removed by the modified circular method, through the middle of the thigh. She died a fortnight after the operation.

2. W. R. fell into a boiler in which food for cattle was being prepared. Both legs were severely scalded, especially the right. As it was not certain to what depth the textures were affected, the limbs were enveloped in cotton wadding, and afterwards hot fomentations applied. Sloughs separated, involving the greater part of the skin covering the posterior surface of the right leg and the lower part of the thigh. It was impossible for such an extensive surface to heal, and as the boy was sinking under the discharge, the thigh was amputated above the middle, by double flap, three weeks after the accident. Died of pyæmia.

Leg.

William D., æt. 11. Five days previous to admission, an empty railway-truck passed over the lower part of the left leg and ankle, crushing the limb severely. The chief part of the soft textures over both lateral surfaces of the ankle-joint was evidently destroyed; the sloughs separated on the third day, and the tibio-tarsal joint was laid bare. On the ninth day the fever having assumed the hectic character, the limb was amputated below the knee by a long posterior flap. He went on favourably for six days, but at the end of that time the feverish symptoms returned, accompanied with pain, tenderness, and swelling of the abdomen. A few days subsequently the glands of the neck enlarged, the vomiting and headache became intense; he gradually passed into a state of delirium, and died comatose in the third week after the operation.

SECONDARY AMPUTATIONS FOR DISEASE.

Arm.

J. M'G., æt. 25. Both surfaces of the fore-arm and the internal surface of the arm were severely burnt in childhood. By the cicatrization the elbow was forcibly flexed, and the limb became a useless appendage. A few years ago the skin over the olecranon process gave way; the ulceration extended for a considerable distance, and assumed a cancroid appearance. She suffered great pain, and her general health was giving way. There were no glandular enlargements in the axilla. Amputation was performed close below the surgical neck of the humerus by a long external flap and very short internal. Recovered.

Fore-arm.

Mrs D., æt. 45, had suffered for several months from disease of the wrist, but it was within the last few weeks that the joint

opened and sinuses formed, which led down to carious bone. Her health was considerably impaired by the pain and discharge. Amputation through the middle of the fore-arm, by double flap formed by transfixion. The greater part of the wound healed readily; but in the third week she had a succession of rigors which were followed by the usual symptoms of pyæmia, and of this she died in the fifth week after the operation.

Thigh.

1. J. A., æt. 19, admitted December 22d, on account of a tumour on the inner aspect of the lower third of the thigh. Shooting pains and weakness in the limb had directed his attention to it in July, but at that date the enlargement was very slight. Afterwards, however, it increased rapidly, and soon became the size of a small cocoa-nut. The tumour was ill-defined and fixed, with a semi-fluctuating feeling, and the veins over its surface were distended. There were no enlarged glands in the groin. The patient pale, cachectic, had been losing flesh, and had a rapid pulse. Amputation was performed below the trochanters by nearly equal flaps. Died of pyæmia.

2. J. S. Caries of the tibia. Sinus leading into the knee-joint. Amputation at the lower third of the thigh, by the long anterior flap. Recovered.

3. J. B., æt. 5. Gelatinous degeneration of the synovial membrane of the knee-joint, going on to suppuration. Joint opened. Profuse discharge. Hectic. The patient was emaciated to the last degree, and fast sinking. Amputation by the long anterior flap. After the operation he daily gained flesh, and in the course of six weeks became a lively spirited child.

4. C. Cl., æt. 10. Six years ago she suffered from necrosis of the femur, and several pieces of bone were removed. As the disease communicated with the joint, and the position of the limb was neglected, it became flexed at a right angle. After admission she had an attack of scarlatina. On her recovery, the limb was amputated in the lower third of the femur, by the long anterior flap. The stump was healing rapidly, when, in the second week, she had an attack of acute nephritis, followed by uræmia, which soon proved fatal.

5. J. S., æt. 13, admitted on account of a large strumous sloughing ulcer, involving almost the whole posterior surface of the leg. Cicatrices in the neck. Phthisical signs in both pulmonary apices. Under constitutional treatment her general health improved,—the ulcer assumed a more healthy appearance, and partially cicatrized; but after walking a little, on two successive days, the whole of the newly-formed tissue sloughed. She suffered intense pain; the discharge was profuse, and she was evidently fast sinking. As the only chance of recovery depended on amputation, the limb was removed by the long anterior flap. Rigors occurred on the eighth

day; she became jaundiced, and died on the eleventh day after the operation.

6. M. L. Gelatinous disease of the knee-joint, of eight years' duration, ending in ulceration of the cartilages, and caries; limb flexed; sinuses into the joint; profuse discharge. Amputation through the lower third of the thigh, by the long anterior flap. Recovered.

7. J. W., æt. 12. Necrosis of the whole shaft of the tibia, accompanied with a profuse fetid discharge, which escaped through several orifices. Ankle-joint anchylosed in an extended position. Patient very much emaciated, and extremely weak. Amputation through lower third of the thigh, by the long anterior flap. Although the stump, externally, looked perfectly healthy, acute necrosis had attacked the shaft of the femur, and on the fifth day a large subperiosteal vessel was opened into. The poor boy, mistaking the hæmorrhage from this source for the purulent discharge, gave no notice of the occurrence, and it was only in consequence of his becoming blanched and faint that the resident surgeon was sent for. The stump was laid open and the vessel seized hold of, but, on attempting to tie it, it gave way and retracted. The stump was then raised, cold applied, the patient carefully watched, and stimulants largely given. He was too weak to bear up against the loss of blood, and sank the next day.

8. C. Cn., æt. 25, had suffered for eight years from strumous disease of the knee-joint, with ulceration of the cartilages and necrosis of the lower end of the femur. The pain had become so intense as to compel her to seek relief in large doses of laudanum. She was very much emaciated, and excessively weak. Amputation by the long anterior flap. Secondary hæmorrhage from the femoral artery occurred on the eighth day; the alarm was immediately given, and Mr Spence, who was in the wards at the time, secured the vessel. During the succeeding fortnight the stump healed rapidly, and the wound was almost completely united, when rigors set in; these were followed by the usual symptoms of pyæmia, which proved fatal in the fifth week after the operation.

Leg.

1. R. A., æt. 43. Large callous ulcer, involving nearly half the internal surface of the leg. The patient had been subjected to a great variety of treatment, ending in temporary relief. As it was impossible to obtain a sufficiently long posterior flap, it was necessary to cut a short anterior flap from the front of the leg. The wound healed readily, and the patient never had an unfavourable symptom after the operation.

2. A. A., æt. 50. Six years ago he sustained a compound fracture of the lower end of the tibia, communicating with the ankle-joint. After prolonged treatment, the parts united; but he was never able to make much use of the limb. Pieces of bone had

been repeatedly removed. Acute inflammation lately attacked the joint, and ended in caries. From the various sinuses there was a profuse discharge, under which his general health was rapidly giving way. Amputation below the knee by a long posterior flap. Recovered.

Ankle.

1. R. H. Strumous disease of the ankle, ending in caries and ulceration of the cartilages. Ordinary amputation. Recovered.
2. J. M. Caries of tarsus. Large ulcer over the outer surface of the os calcis. Under these circumstances, it was necessary to perform amputation by an internal lateral flap. Recovered.
3. G. M. Caries of tarsus, with sinuses. Ordinary amputation. Recovered.
4. J. H. Strumous disease of the tarsus. Abscess in the interior of the os calcis. Ordinary amputation. Cured.

Remarks.—There were thirteen amputations for injury; of these nine were primary and four secondary. Four of the first class died, and five lived. The causes leading to death were different in each instance. Primary amputation at the shoulder-joint is one of the most successful of the major operations. If a fatal result speedily follows its performance, as in the present cases, it will be found to depend on unavoidable causes, such as the complex nature of the injuries, hæmorrhage, etc. One died from the severe shock arising from the crushed arm, the dislocated hip, and the lacerated foot; the other, an old man, perished from the effects of the loss of a large quantity of blood previous to admission. A third patient died on the sixteenth day after amputation below the knee. She was a dissipated old woman, and at an early date was attacked with delirium tremens. The fourth is of more interest, both with respect to the nature of the chief injury and the results following on amputation. The fracture was similar to that which is produced by a spent cannon-ball striking the limb, the bone being shattered; the muscles and vessels reduced to a pulp; the skin, through its superior toughness and elasticity, unwounded, but its vitality completely destroyed. The amputation was performed by skin-flaps, above the middle of the thigh, where the textures appeared sound. Very little muscle was retained, because it is impossible to define exactly the extent to which the subcutaneous textures have been destroyed, and the risks of pyæmia are greatly increased by having a large suppurating surface. The whole, however, of what was necessarily kept to cover the bone sloughed, and the femoral artery, lying amidst the diseased mass, was opened into fully an inch and a half above the ligature, which remained firmly attached to the vessel. By the time the hæmorrhage occurred, the limit of the sloughing had been defined, and as it did not extend high up amid the muscles, the artery was cleared and tied in the stump, at a

considerable distance above the ulcerated opening. After this the sloughs separated, and the stump was healing favourably, when the bruises in the left limb suppurated, and the patient sank under the profuse discharge. On carefully dissecting the amputated thigh, an enormous extravasation of blood was found to have escaped from the popliteal vein, which had been perforated by one of the fragments, at the lower margin of Hunter's canal. The absence of pulsation in the tibials depended on the complete division and retraction of the internal and middle coats of the superficial femoral artery, which stopped the circulation as thoroughly as if the vessel had been ruptured. Doubts have been expressed by writers on surgery as to the propriety of performing amputation through the wrist-joint, on account of the tendency to exfoliation of the cartilages, and sloughing of the tendons. To avoid the former danger, it has been proposed to saw off the ends of the bones; but if this rule were followed, one of the advantages of the operation would be lost, since anchylosis would be certain to occur in the radio-ulnar articulation. The rapid recovery, and the small amount of discharge in T. C., tend to negative these objections. When the patient was seen six months after dismissal, the stump was excellent, and the movements of pronation and supination complete. Mr Spence, in the case of J. M'C., took the flap from the internal aspect of the leg, in order to avoid the pressure of the crest of the tibia, and ulceration of the anterior flap. The result was perfectly satisfactory, both with respect to the entire absence of irritation and the usefulness of the stump; but it was in no way superior to the long posterior flap treated *on its side* in a flexed position. Out of the four secondary amputations for injury, three died after prolonged attempts to save the limbs. In both Wm. D. and M. J., the textures were severely injured; in the former, the destruction was immediate and complete; in the latter, the muscles were chiefly affected, and the skin only gave way after the occurrence of acute necrosis and suppuration. The operation would have been performed on M. J. at a much earlier period, but her parents withheld their consent until she was *in extremis*, and the chance of recovery almost gone. When acute necrosis sets in after injury, as in her case, and the progress of events necessitates amputation, there is always great risk of death from pyæmia. In this instance, however, pyæmia had probably begun previous to the operation. She died of the more fully developed symptoms a fortnight afterwards. Amputation for burns, as in the case of W. R., where the patient has not recovered from the effects of the injury, and is suffering from irritative fever, is also often followed by pyæmia; whereas amputation for the secondary result of burns, as in J. M'G., is generally very successful.

There were sixteen secondary amputations for disease, and of these six died. This mortality, which exceeds that of any former year, arose from the nature of the previous maladies, the unhealthy

state of the season, and the prevalence of pyæmia. In J. A. it was necessary to saw through a bone, the lower part of which was the seat of a malignant tumour. Such an operation is always attended with great risk to life. This is partly due to the necessity in most of these cases of approaching close to the trunk, and thus producing a great amount of shock in a vitiated system. Amputation through the shaft of a bone affected with necrosis, as in C. Cn., C. Cl., or for acute necrosis, as in J. W., is much more dangerous than for strumous diseases of joints, or cario-necrosis of the bone, on the distal side of the joint, as in J. S. The patients in these cases, being predisposed to affections of the osseous system, acute necrosis is very apt to attack the stump and prove fatal, either by laying open a subperiosteal vessel, as in J. W., or more commonly by leading to pyæmia. The two instances of secondary hæmorrhage differed widely as to their pathology. One occurred in an unhealthy female, and was due to the setting in of pyæmia preventing the proper plastic changes, or breaking up those which had already begun. In the other case, the hæmorrhage proceeded from a subperiosteal vessel; and as the stream of blood was small, it nearly proved fatal before attracting the patient's attention. In the former, the femoral artery was tied in the stump as high up as possible; in the latter, an attempt was made to seize the bleeding point, but failed; the elevation of the stump, however, and the application of cold, sufficed to check the hæmorrhage. The febrile attack in C. Cn. seemed at first to resemble scarlatina; its subsequent course rendering this opinion doubtful, and the health of the patient being apparently restored, the operation was performed. A tendency to renal affection was still present; and, within a few days, acute nephritis set in, followed by pyæmia.

Primary Excision of Joints.

Elbow-Joint.

H. C., æt. 21, fell from the roof of a house four storeys high, and sustained a compound comminuted fracture of the lower end of the right humerus opening into the elbow-joint, a compound fracture of the right femur, and several bruises about the head and trunk. When the shock had partially disappeared, a single longitudinal incision was carried along the back of the elbow-joint; the loose fragments were removed, the end of the humerus rounded off, and the heads of the radius and ulna sawn across. The patient, who was of intemperate habits, and by no means strong, gradually sank and died on the fourth day, without ever having been fully conscious after the accident.

Knee-Joint.

R. K., æt. 34, jumped out of a railway train as it was leaving the station. He fell on the left knee, and his head and shoulder struck against a stone wall. On admission, he was found to have sus-

tained several bruises about the head, a dislocation of the left shoulder into the axilla, and a slightly lacerated wound over the anterior surface of the lower end of the femur. Through the wound, which extended about two inches transversely, the finger could be passed into the knee-joint, and a piece of the outer condyle could be felt detached. The extremities of the incision were prolonged in a semilunar manner, so as to form a large flap, which was turned down. The ends of the bones were cleared and sawn off. No vessel required ligature. The limb was placed in a straight M'Intyre splint, with a well-padded Gouche's splint behind the joint. For a few days the patient was very low and prostrate; but he rallied, and went on without a bad symptom for four weeks, during which time almost the whole incision healed, and the discharge was reduced to a minimum, which escaped from the most dependent point of the internal horn of the wound. About the beginning of the fifth week the splint was changed, and as the patient was very restless, the limb was unavoidably moved; two days thereafter the pulse rose, rigors and sweats followed, he became jaundiced, delirious, and died six weeks after the operation.

Secondary.

Knee-Joint.

M. B., æt. 21, admitted on account of ulceration of the cartilages, along with caries of the lower articular end of the femur. The disease had been present for years, but she had only been for a few months confined to bed. Several different forms of treatment were tried without any beneficial effect. Excision was performed by a semilunar incision. A small part of the patella was diseased; it was scooped out, and the bone retained. The limb was placed in a Ferguson's splint. With the exception of the extreme ends, the whole of the incision united by the first intention. Firm anchylosis took place between the bones, and three months after the operation she could stand and walk unsupported. To ensure safety, however, she was kept at rest for a longer period before being dismissed. Cured.

Shoulder-Joint.

1. J. R., æt. 30, was placed under Mr Spence's care about a year ago, on account of caries of the head of the humerus. He was greatly benefited by the application of the actual cautery, and returned home. A few months thereafter the disease recommenced, but he disregarded it, until the severe pain, the disturbance of his rest, and the breaking up of his general health, compelled him to seek surgical advice. On admission the emaciation was marked, the night sweats profuse, and the discharge abundant from two sinuses which communicated with the joint. Under the clavicle there were the physical signs of phthisis in its first stage. When he had improved a little, the head of the bone was removed by a single longitudinal incision, commencing a little below the acromion

process, so as to include the sinuses in front. By freely enlarging the sinus on the posterior aspect of the joint, a dependent opening was formed, to allow the escape of the discharge. The operation was almost immediately followed by a marked general improvement, and in the course of two months he was much stronger than he had been for the two preceding years. The wound healed readily; the new joint became tolerably firm, but permitted of quite sufficient motion to allow the hand an extensive range of movement.

2. R. C., æt. 34, suffered from disease of the shoulder-joint for three years. The pain had for some time disappeared; he only complained of the profuse discharge, and of its affecting his general health. Strong, dense adhesions had formed between the neck of the humerus and the surrounding tissues, greatly impeding even the passive movements of the joint. The coracoid process was enlarged and elongated. The only peculiarity in the operation was the great difficulty in projecting the head of the bone sufficiently to allow of the application of the saw; but the strong adhesions which prevented this being done were afterwards of great service in strengthening the joint. The wound healed readily, although the patient was very liable to spreading erythema, and had two attacks during his convalescence. Dismissed cured.

Elbow-Joint.

1. A. G., æt. 16. Caries of the lower end of the humerus, of four months' duration. Abscess of the joint. Excision by a single longitudinal incision. Cured.

2. E. C., æt. 8. Strumous disease of the elbow-joint, of several years' duration. Humerus unhealthy; sinuses leading into the joint. Excision by a single longitudinal incision. Cured.

3. J. D., æt. 6. An exceedingly strumous child, who had suffered for a long time from scrofulous disease of the elbow-joint. Excision by a single longitudinal incision. Cured.

4. R. A., æt. 23. Anchylosis of the elbow-joint in the extended position, the result of caries succeeding injury. Excision by a single longitudinal incision. Cured.

5. J. T., æt. 16. Strumous disease of the elbow-joint, of several months' duration, causing great pain, and affecting her general health. Phthisis in an advanced stage. Excision by the H incision. After the removal of this source of irritation, she became remarkably strong. Cured.

Remarks.—There were two cases of primary excision of joints—one of the knee, the other of the elbow. Both died, the former of pyæmia, five weeks after the operation; the latter of shock, four days after admission. In the treatment of a large wound in the knee-joint, accompanied with the detachment of a piece of the condyle, the choice in adults lies between amputation and excision. The only

mode in which a cure can be effected is by destruction of the cartilages and anchylosis of the bones. Nature would bring the articular surfaces into the proper state for osseous union, by setting up acute inflammation within the joint, attended with great constitutional disturbance and exfoliation of the cartilages. But when the ends of the bones are removed, the limb is in the same state as after a compound fracture, and the risks to life are similar. Excision is preferable to amputation, as it produces a less amount of general shock, is less frequently followed by pyæmia, and yields a much more satisfactory result. In R. K. the injury was well adapted for excision, as the leg and upper part of the thigh were intact, and the wound only required the extremities to be prolonged in a semilunar manner, in order to give ready access to the joint. The patient was also comparatively young, temperate, and strong. He went on most favourably until after the shifting of the splint in the fourth week, when the limb was unavoidably moved; this was followed by acute inflammation of the bones and pyæmia.

The fatal result in H. C. need scarcely be wondered at; it had nothing to do with the operation, but was entirely due to the shock of the many severe injuries.

M. B. was a favourable case for excision, inasmuch as she had ceased to grow, was in fair health, and was affected with limited caries of the joint. Only a small piece of the cartilage of the patella was diseased; this portion was scraped away and the rest of the bone retained, so as to give greater firmness to the anchylosed bones. She went on most favourably, and can now walk on the limb. When advanced disorder of the joint is associated with phthisis, as in J. R., we must discriminate how far the general symptoms depend on either disease; and if they are chiefly due to the former, excision, or even amputation, may be unhesitatingly performed, and they will often be followed by as marked an improvement as took place in this instance. The irritation within the joint in R. C. had led to great thickening of the ligamentous textures, and the deposition of osseous matter around the joint, especially on the coracoid process, which was greatly enlarged and elongated. From this state of the surrounding tissues, considerable difficulty was experienced in projecting the head of the bone sufficiently to permit of the application of the saw. The patient made a rapid cure; the adhesions insured a firm basis for the movements of the joint, and rendered the arm so powerful, that shortly after dismissal he engaged in breaking stones.

Out of the six cases of excision of the elbow-joint, five were done by the single longitudinal incision, and in none of these was there any difficulty in the performance of the operation. Although in two of the cases erysipelas attacked the wound, and the union was altogether by the second intention, the joint was finally as perfect as in the others, and the cure little prolonged. In these no complex bandaging was required to keep the edges of

the wound in apposition, as is necessary when the H incision fails to heal by the first intention; the limbs were simply laid on pillows in a semiflexed position, so as to permit of the easy application of fomentations.

In all the cases, passive motion was begun at an early period, and the patients within two months could move the joints in a very perfect manner, and lift light weights.

Tumours.

Tumours of the Breast.

1. M. A., æt. 39, admitted 2d March. Scirrhus of the mamma, of four years' duration. Growth rapid within the last year. No glandular affection. Excision. Dismissed 17th April, cured.

2. J. M'C., æt. 50. Scirrhus of the mamma, of two years' duration. No glandular enlargement. Excision. Cured.

3. A. M., æt. 42. Scirrhus of the mamma, of five months' duration. About the size of a small apple No glandular enlargement. Excision. This patient was exceedingly stout; the fat in the wound sloughed and was destroyed with potassa fusa. Rigors set in on the eighth day, followed by pneumonia, inflammation of the left hip and wrist-joints, together with jaundice, and the other signs of pyæmia. Death.

4. J. B., æt. 40. Scirrhus of the mamma, of five years' duration. Enlarged glands in the axilla and subclavian triangle. No operation.

5. S. C., æt. 46, admitted 27th August. Scirrhus of the mamma, of one year's duration. No glandular enlargement. Excision. Cured 7th October.

Tumours of the Face and Neck.

Mrs J., æt. 34, admitted 11th November 1862, with an enormous tumour occupying the right side of the face and neck. The growth had been of sixteen years' duration, and commenced as a small "kernel" under the lobule of the right ear. At intervals its size had rapidly increased, especially within the last two years. On admission its circumference was bounded as follows:—Commencing about an inch from the spine of the second cervical vertebra, it extended downwards to within an inch and a half of the clavicle; thence it swept obliquely upwards to the cricoid cartilage, the angle of the mouth, and outwards to the external angle of the orbit. From this point it passed, first downwards, then horizontally backwards, stretching the lobule of the ear, till it reached the spinal column. The surface of the tumour was irregular and nodulated; the skin tense, especially over the upper portion; the superficial veins, however, were not much distended. The cervical portion was firm to the touch, but the more prominent facial division was soft and semi-fluctuating. The tumour was in direct contact with the deep vessels and nerves lying beneath the sterno-mastoid muscle, whose

course was marked by an oblique firm depression. There was no enlargement of the glands, and the general health of the patient was good, though she was somewhat pale. In order to expose the tumour, four incisions were requisite. Two were carried in an elliptical manner, from the lobule of the ear to the origin of the sterno-mastoid; a third, from the centre of the posterior of these curved incisions, backwards and slightly downwards, to the outer margin of the growth; and a fourth, from near the angle of the mouth, downwards and outwards, to the centre of the anterior curved incision.

During the course of the operation, various nerves and vessels were laid bare. The common carotid and jugular vein were distinctly visible throughout nearly their whole extent, and the phrenic nerve was exposed where it lies on the scalenus anticus. The external carotid was felt pulsating in the upper part of the wound, while the cervico-facial division of the seventh nerve, which was seen crossing the tumour, had to be cut through. The loss of blood did not exceed eight ounces; it was chiefly venous, issuing from the large veins passing out of the tumour. The recovery of the patient was necessarily slow; but, at the end of two months, she was discharged, cured. Recent intimations state that she enjoys the best of health; that the paralysis induced in the right side of the face is improving; and the cicatrices are becoming less marked.

The tumour was fibro-cartilaginous, and weighed rather more than seven pounds.[1]

W. F., æt. 13, admitted 24th April. Six weeks previous to admission a companion had repeatedly struck him on the nose with a stone. Next day the part was considerably swollen; and, as the tumefaction continued to increase, he was sent to a doctor on the third day. Poultices were ordered to be applied for some time, and afterwards an incision was made, but no matter escaped. He was recommended to consult Mr Spence, and came to the hospital two weeks after receipt of the injury. The opening was enlarged, and the wound bled very freely, but still there was no trace of pus. His parents insisted on taking him home, and did not return with him for a month afterwards. Meanwhile the tumour had rapidly increased to the size of a small apple. It was soft and fluctuating to the touch, and was situated between the nasal bones, pressing them asunder. After admission it steadily enlarged, fungated, and was attended with slight hæmorrhages, which were easily checked, however, by cold or the perchloride of iron. Its lateral pressure led to sloughing of the superjacent skin, and through the opening on each side there projected a fungating mass. The expansion of the growth was likewise accompanied by displacement of the eye-balls and œdema of the lids. The conjunctiva of the right eye became congested; the cornea dull and opaque; the whole contents

[1] A full report of this unique case will be found in the Dublin Quarterly Journal of Medical Science for November 1863.

atrophied, and eventually the loss of sight was complete. At a later date the left eye was similarly affected, and by the middle of July the boy was totally blind. The pain during the first two months was trifling; but afterwards its sharp, violent, and lancinating character greatly disturbed his rest, and hastened on the fatal termination. He was sensible up to three days before his death, which took place 24th July.

Post-mortem Examination.—A large, prominent, fungating tumour, about the size of a cocoa-nut, was found occupying the whole nasal region, projecting over the cheeks and forehead, and almost completely filling both orbits. It extended into the posterior nares; the ethmoid bone had been completely absorbed; and in the situation of the cribriform plate, a portion about the size of a walnut pressed directly on the brain. The structure was medullary.

D. B., æt. 22; very diminutive for his years; pale, emaciated, and with a small pulse. He first presented himself at the hospital three years ago, when he was supposed to suffer from a malignant tumour of the upper jaw. At that time there was great fulness of the right cheek, the eye was pushed forwards and upwards, the palate greatly depressed, and through the right nostril a red, bleeding, fungating, polypoid mass projected. During the interval, he had been repeatedly under observation, and the slight differences in the tumour were carefully noted. On admission the teeth were observed to be perfectly regular; there were no head symptoms; nor was there any eversion of the eyeball. Taking these physical appearances into account, and also the fact that the growth of the tumour had been slow, Mr Spence concluded that it was simple, and that it had originated behind the superior maxilla. Since many of these pharyngeal polypi have a narrow base, although their pedunculated masses are often large and long, it was thought that by excising the upper jaw, the growth could be exposed and removed. The dangers of the operation were laid before the patient and his friends, he nevertheless eagerly embraced the only chance of getting quit of a disease which rendered life useless and a burden. The incision was made according to Dieffenbach's method; but, in order to obtain a ready access to the growth, it was extended along the zygomatic arch, in a line with the fissura palpebrarum. The flap, thus made, was reflected outwards; the bleeding vessels ligatured, and the jaw-bone detached and removed in the usual manner. Before removing the maxilla, it was necessary to separate a large pedunculated mass of the growth, which passed through the pterygo-maxillary fissure, round the outer border of the jaw, and which, lying upon its anterior surface, caused the tumefied appearance of the cheek. A second mass passed through the spheno-maxillary fissure, and projected the eyeball forwards and upwards; while a third, situated chiefly in the pharynx, depressed the soft palate, and likewise protruded through the anterior nares. The base was very broad, extending over the lower

surface of the body of the sphenoid bone, the internal pterygoid plate, and the anterior portion of the basilar process of the occiput. It being impossible to remove the whole morbid structure, the large polypoid masses were first taken away, and then, with a pair of scissors, the remainder was cut close to the bone. The bleeding was trifling, no vessel requiring a ligature. The patient fainted before the completion of the operation; his face became blanched, his pulse weak, and breathing feeble. To relieve these symptoms a brandy enema was administered before carrying him to bed. After this, prolonged attempts were made to revive him, by the use of galvanism and stimulants, but he never rallied from the state of syncope.

B. C., æt. 50, was admitted in a state of great exhaustion. For eight years she had suffered from a malignant tumour, which commenced in the soft tissues of the cheek. At first its growth was slow; but at the end of two years it burst, fungated, increased rapidly, and was attended with intense lancinating pain, repeated hæmorrhages, and a very fœtid discharge. The base of the tumour extended over the greater part of the superior maxilla, the ascending ramus of the jaw, and the lower temporal region. No operation. Died of exhaustion a fortnight after admission.

Mary C., æt. 65. Malignant tumour of the lower jaw, which commenced about six months previous to admission, opposite the first molar tooth, and was accompanied with sharp shooting pains. At the date of admission the tumour was about the size of the closed fist, and extended transversely from the left angle of the jaw to the mesial line of the chin. It felt firm to the touch, and the skin over the lower part of the growth was of a dark red colour, and would soon have given way. There were no enlarged glands in the neck. The usual incision was made for removal of the left half of the inferior maxilla. The bone was divided a little beyond the middle line, and then disarticulated. Died of pyæmia, eight days after the operation.

C. M., æt. 23, a healthy woman, had been for six years affected with a tumour, which commenced a little below the right ear. From this point it gradually extended backwards to the middle line, forwards to the angle of the jaw and the anterior border of the sterno-mastoid, and downwards to the level of the cricoid cartilage. The anterior portion was of a cystic character; it was very prominent, situated over the sterno-mastoid, and had a pulsatory feeling, which diminished when pressure was made on the common carotid. A bruit, varying in distinctness, was audible through the stethoscope, placed over the lower part of the tumour. The posterior division was flatter, non-fluctuating, more distinctly pulsating, and with a louder bruit. By pressure on it, the contents could be partially emptied into the general vascular system. During the three months that the patient was under close observation there was no increase in the dimensions of the growth; no pain or any interference with her general health; the skin covering it was lax

and natural in colour. She left hospital, promising to return whenever the symptoms became worse.

J. B., æt. 45. Large cystic bronchocele, formed of two distinct cysts, which were both tapped. The one contained a clear serous fluid; the contents of the other resembled those of a hematocele. The former was injected with tincture of iodine, and when the acute inflammatory symptoms had diminished, a blister was applied, and the iodide of potassium given internally. After the swelling was considerably diminished, he returned home, and since then the cure has gone on favourably.

E. B. Fibrous tumour, about the size of a walnut, situated over the left side of the hard palate. Excision. Cured.

W. R., æt. 41. Fibrous tumour, about the size of a hen's egg; situated in the digastric fossa. Removed by a transverse incision. Cured.

Trunk and Extremities.

J. S. Fatty tumour, as large as a foot-ball, of twenty years' growth, situated over the right scapula. The skin was adherent over part of the mass. The arm was atrophied, and there was partial loss of power. Removed by an elliptical incision. Cured.

B. R. Lobulated fatty tumour, about the size of an orange, situated over the scapula. It was found to be pretty firmly attached to the subjugated textures. Cured.

J. G. Solid bursal tumour over the peroneus tertius, about the size of a small apple. Excision. Cured.

J. C. Immediately above the internal condyle there was a pedunculated exostosis, which greatly impeded walking, and which he was anxious to get rid of. A longitudinal incision was made over the growth, and a short transverse one through the muscles and fascia, so as to allow the pedicle to be completely exposed and cut through with the bone pliers. A few days after the operation, acute inflammation of the cellular tissue of the thigh set in, and went on to suppuration. The discharge escaped through the wound, and a counter opening made about the middle of the thigh. Cured.

J. A., admitted with a tumour over the inner surface of the lower third of the thigh, which, on microscopic examination, was found to consist of osteoid and medullary cancer (see *Amputations of the Thigh*).

Erectile Tumours.

H. G., æt. 23. At birth there was a red mark over the chin, but it never caused inconvenience until two years ago, when it began to grow rapidly, and assume the tumour form. By the date of admission it had attained the size of a hen's egg. It was repeatedly injected with the perchloride of iron, and, in consequence of this, a large slough formed, the base of which was transfixed with needles, and surrounded by a ligature. Thereafter the slough

separated. The remainder was touched at times with potassa fusa, and occasionally injected with the perchloride, until the whole had become perfectly solid. The wound cicatrized, and the bulk of the tumour has gradually diminished under the local use of the tincture of iodine.

E. M'C., æt. 64. For fifty-one years patient had had a growth on the outer surface of the right foot, but it had remained almost stationary until three weeks before admission, when it began to grow rapidly, and, from her persisting in attempts to wear a shoe, ulcerated on the surface. The tumour was ovoidal in shape; its long diameter two and a quarter, and its transverse one and three-quarter inches; it was of a soft consistency, and the skin covering it was of a normal colour. The tumour was removed by transverse incisions. There was pretty free hæmorrhage, but all the vessels were easily secured. On carefully examining the growth it was found to consist of a collection of bloodvessels. The wound healed favourably and rapidly.

In addition to these, there were many examples of small nævi, treated successfully by the injection of the perchloride of iron and the subsequent application of tincture of iodine.

Epithelial Growths.

1. M. D., æt. 50. Affected with epithelial cancer of the mucous membrane lining the interior of the cheek. The disease was attended with severe lancinating pain. No glandular enlargement. As it was possible to remove the whole of the morbid structure, a somewhat curved incision was carried from a little external to the angle of the mouth, upwards to the anterior border of the ramus of the jaw. The healthy textures were then dissected from off the surface of the growth, and its deep connexions with the mucous membrane covering the alveolar margin of the lower jaw, divided. The wound healed very rapidly. Cured.

2. D. H. Epithelioma of lower lip. No glandular enlargement. Removed by V-shaped incision. Cured.

3. W. L. Epithelioma affecting the prolabium of lower lip. Removed by scissors. Cured.

4. G. T. Epithelioma affecting a large central portion of the lower lip. V incisions. Cured.

5. W. D. Cancerous ulceration of the side of the tongue and soft palate. Enlarged glands in the neck. No operation.

6. P. D. Large epithelial ulcer of the side of the neck, exposing the muscles. Glands enlarged. Patient very much reduced. Dismissed *in statu quo*.

Testicle.

D. W., æt. 34. Medullary tumour of the right testicle, which, within ten months, had attained the size of a goose's egg. There was no glandular enlargement in the groin. Excised. Cured.

S. H., æt. 31, was kicked on the testicle seven months ago, and within a few weeks observed it swollen. The tumour steadily increased, and had reached the size of a large hen's egg at the date of admission. It was in general firm in consistence, but at various points there was a feeling of semi-fluctuation; it was the seat of intense lancinating pain. No enlarged glands in the groin. Excision. Cured. The tumour was medullary-cystic.

E. C., a groom, had a chancre three years ago, and was mercurialized. A year previous to admission the testicles began to swell, and the skin over the left one sloughed. The testicle projected through the opening, and fungated. For some time lotions were applied, and iodide of potassium given internally, but without any beneficial effect. The skin around the tumour was therefore pared and the edges stitched together by silver suture. The wound healed readily. Cured.

M. P., æt. 28 years. Labouring under tertiary syphilis. The right testicle was removed in New Orleans about a year before admission, under the supposition that its enlargement was due to malignant disease. Within the previous five months the left testicle enlarged to three times its normal size, and became the seat of lancinating pain. No. 10 bougie passed easily into the bladder. The treatment consisted at first of fomentations of acetate of lead and opium, and afterwards simple and mercurial strapping. A full-sized bougie was occasionally passed. Internally, iodide of potassium, and subsequently quinine. Cured.

Remarks.—Surgical authorities differ as to the propriety of interfering with large tumours situated beneath the sterno-mastoid; and in the few cases in which it has been attempted by British surgeons, it has been found impossible to complete the operation on account of the firm subjacent connexions. This important question, of the presence of adhesions, cannot be predetermined by any process of manipulation, because the bulk of the growth stretches the textures, and the laxity of the bloodvessels, etc., allows them to move readily along with the tumour. But from a consideration of the physiological symptoms it may be decided that the underlying nerves are not implicated where the processes of respiration and deglutition remain unaffected, and that neither the internal jugular nor carotid are materially involved so long as the arterial and venous supply of the face and neck continues unchanged. Although all these evidences were in favour of surgical interference in the case of Mrs J., the probability of complete removal, and of future immunity from a return of the disease, depended essentially on the nature of the growth. If the tumour was simple, there was a possibility of breaking up any adhesions which might have occurred between its surface and the bloodvessels; but if it was malignant, the contiguous parts would be so intimately incorporated with the diseased mass as to destroy every chance of a successful result. The diagnosis of

the non-malignancy of this enormous tumour rested on the account of its origin sixteen years previously, on the distinct definition of its circumference, and on the absence both of cachexia and glandular enlargement. Latterly, the bulk had rapidly increased, and this might have been attributed to degeneration; but it could be explained more satisfactorily by the progressive enlargement of the bloodvessels, the greater activity of the nutritive changes, and the consequent increase from its own inherent power of growth. The dangers, to be apprehended from an operation, were hæmorrhage from the arteries supplying the tumour, or from the great veins returning the blood, the entrance of air into any of the large veins that would require to be divided, injury of the phrenic or vagus nerves, and exhaustion of the patient from a prolonged operation, and exposure of a large extent of surface. These dangers were so far guarded against by tying the arteries whenever they jetted, and likewise many of the large veins before division, and by keeping the edge of the knife directed towards the deep surface of the tumour; while the fingers of the assistant followed the track of the dissection and protected the vessels as they were exposed.

The case of W. F. is, in the first place, important medico-legally, inasmuch as the tumour apparently resulted from a blow. It followed the injury so closely that it might have been regarded as an instance of cause and effect, and a question might have arisen as to damages or punishment. Doubtless, there are cases where no other explanation can as yet be brought forward to account for the occurrence of a malignant tumour in a perfectly healthy person with an unexceptionable family history. But several of the relatives of this patient had died from malignant disorders, and the tumour, instead of arising at the seat of injury, came from a deeper source (the ethmoid cells), where it must have existed prior to the infliction of the blow, which, along with the incisions, merely stimulated it to a more rapid growth, and by removing all tension, allowed it to fungate. When the patient first came to hospital the swelling presented the usual appearances of inflammation; it was red, hot, tense, painful, and fluctuating. Regarding it as an instance of unhealthy suppuration occurring in connexion with effused blood, the small incision which was formerly made in it was enlarged, so as to evacuate the matter; but no pus escaped, and the bleeding which followed was very free. He went home and applied poultices and hot fomentations to the swelling. On his return, after a few weeks, the true nature of the growth was evident from its rapid increase in size, widely separating the nasal bones, and encroaching on the cavity of the right orbit, and along with this there were the usual constitutional signs of the malignant cachexia. The tumour being now viewed as encephaloid, the next question to be decided was how to treat it. Removal by the knife was impossible, both from the situation and the want of circumscription, and the application of escharotics was full of danger, seeing that previous to forcing

asunder the nasal bones, it must have led to absorption of the thin plate of the ethmoid, and been lying in direct contact with the brain. Treatment was therefore restricted to palliatives.

At first it was impossible to form a diagnosis of the case of D. B., because it presented all the appearances of a malignant growth, commencing, like the former, in the ethmoid cells, but, instead of pressing directly forwards, it passed downwards into the cavity of the nose, pushed forwards the upper jaw and eyeball, and projected through the anterior and posterior nares. During several years the boy was at different periods an inmate of the hospital, and was seen by many surgeons who all coincided with this opinion. From observing, however, the slow growth of the tumour, over an extended period, and the absence of advancing cachexia, Mr Spence, in the first place, concluded that it was non-malignant in structure, and taking into account the regular arrangement and sound state of the teeth, and also the direct displacement of the eyeball forwards, considered, in the second place, that it was a large naso-pharyngeal polypus, composed of three or four pedunculated masses passing in different directions. Although the base of this form of growth is usually broad, it is definite in its situation. The primary attachment is generally limited to the inferior surface of the basilar process and body of the sphenoid, and to the internal pterygoid plates; the secondary adhesions which may occur in this, as in other forms of tumour, are almost always weak and easily broken up. Viewing the case in this light, the prognosis was still very unfavourable, as the morbid results of this form of growth had already become very urgent, the repeated hæmorrhages having rendered the patient weak and anæmic; while the great depression of the palate so impeded respiration and deglutition, that any further addition to the growth, in this direction, would have necessitated operative measures. Under these circumstances it was absolutely necessary to try some method of relief; and as the patient was urgent in his requests, and anxious to submit even after the very hazardous nature of the undertaking was laid clearly before him, Mr Spence resolved to attempt the removal of the whole growth. Where the tumour is small, partial removal of the jaw or palate may afford access to the base, but where, as in D. B., the pedunculated masses have passed through the fissures, and afterwards increased greatly in size on the different surfaces of the superior maxillary, they can only be dislodged from these situations by resection of the jaw. The latter operation has been successfully performed in similar cases, and has been followed by satisfactory results. Accordingly, in D. B., a like mode of treatment was adopted. The upper jaw was removed, and the pedunculated masses swept away; the hæmorrhage which ensued was trifling, only three vessels requiring ligature. After this the breathing of the patient became more free; but, while the base was being carefully clipped with scissors, syncope supervened. From this state he was partially

rallied by brandy enemata. After the completion of the operation he was conveyed to bed, and attempts made to revive him by the employment of stimulants, galvanism, warmth, etc. The symptoms of shock however deepened, and he sank from the immediate effects of the operation. On post-mortem examination the root of the growth was found to be extensive, and so firmly adherent to the base of the cranium that it would have been impossible to have separated it by avulsion without tearing away the thin layer of bone which separated it from the brain. The only safe method of removal was by cutting it close with scissors, which, however, prolonged the operation.

There were three examples of large vascular tumours. Two of them admitted of treatment, but as the third was neither increasing in size, nor affecting the general health, it was not deemed proper to subject the patient to a dangerous operation. In C. M'P., the tumour was prominent and defined, the skin covering it uninvolved, and the situation over the tarsus, against which firm pressure could be made, if necessary. In such a case, excision is the most speedy and effectual cure, and the danger from hæmorrhage is trifling, when the knife is kept clear of the circumference, so as not to wound any of the dilated and tortuous vessels composing the tumour. As the whole of the lower lip was involved in H. G., the treatment was directed towards effecting destruction or consolidation of the morbid texture, by repeatedly injecting large quantities of the saturated solution of the perchloride of iron in glycerine. After this the central portion sloughed, and in order to hasten its separation the base of the slough was transfixed with harelip needles, and tightly constricted with a ligature. The remainder of the tumour was either destroyed by potassa fusa, or consolidated by reinjecting the perchloride, until the whole had become firm. When this was satisfactorily effected, cicatrization of the wound was encouraged. On dismissal, the great deformity had almost disappeared, leaving in the centre of the lip a linear cicatrix; and although there was still a certain amount of swelling, it was perfectly solid. Since then curative changes have advanced under the local use of iodine, and the cicatrix has now almost entirely shrivelled and disappeared.

Wounds.

1. C. C., æt. 5, admitted 4th December. Was kicked by a horse on the inner side of the left thigh in the lower third. Wound bled so profusely that she fainted, after which the bleeding ceased. When conveyed to hospital, Mr Spence, on examination, found the wound small and transverse in direction. On introducing his finger he discovered that the femoral artery had been completely torn across, and that the lower division was retracted into the popliteal space, while at the same time the upper portion was felt beating higher up in the wound. A large vein was also divided, the contiguous muscles were lacerated and bruised, and the bone

laid bare. Leg cold; no pulsation in tibials. Mr Spence immediately enlarged the wound, and, tracing the course of the artery, tied both ends, the one in the popliteal space, the other in Hunter's canal. The limb was wrapped in wadding, and laid on a soft pillow; the wound dressed with tepid water, and afterwards with lotions. Ligature separated on the twelfth day. No hæmorrhage. Dismissed cured.

2. M. P., æt. 17, admitted 21st May. Two weeks previous to admission this patient received a wound from a piece of broken glass, in front of the right elbow-joint. The bleeding, which was very profuse, was arrested by cold and direct pressure. It recurred, however, twice the same week, and also on the day of admission. When brought to the hospital she was very anæmic, and had a small feeble pulse. Mr Spence, on enlarging the wound, perceived a small puncture in the brachial artery, just above the point of bifurcation, from which blood issued when the tourniquet was relaxed. A double ligature was placed on the vessel, which separated on the fourteenth day. The patient made an excellent recovery.

3. Mrs F. was admitted, 22d April, with an incised wound over the course of the right ulnar artery, a little above the wrist-joint. The hæmorrhage, which was profuse at the time, had ceased. On separating the lips of the wound, however, and sponging it ut thoroughly, the blood jetted through a small opening which had been made in the vessel. A double ligature was applied, and the limb laid in a Gouche's splint. Dismissed cured.

4. D. S., while at work in a quarry, was struck by the sharp edge of a spade on the outside of the left wrist. The radial artery was divided in the hollow between the phalangeal extensors of the thumb. Both ends were searched for and tied. Cured.

5. M. H., a nurse in the surgical wards, had the right radial artery divided in the lower third, by a piece of a soda-water bottle, which burst while she was drawing the cork. Mr Spence, who was in the wards at the time, immediately secured the vessel above and below. Erysipelatous inflammation attacked the hand and forearm, ending in suppuration on the back of the hand. Cured.

6. J. V. received a deep punctured wound in the textures lying between the metacarpal bones of the thumb and fore-finger. The wound bled considerably at the time, and on three subsequent occasions the bleeding issued from the bottom of the wound as if the radial had been opened into. There being no hæmorrhage on admission, pads were placed on the radial and ulnar vessels at the wrist, also on the wound (which was on the palmar surface), and on the dorsum directly opposite. The pads were secured by bandaging, the limb elevated, and the elbow flexed. After this there was no recurrence of hæmorrhage. Cured.

7. W. B., æt. 45, a brewer, received a punctured wound over the inner end of the superficial palmar arch. The patient was

admitted a week after receipt of the injury on account of repeated attacks of hæmorrhage. Pads were placed over the vessels and wound as in the case of J. V. Bleeding did not recur, but acute inflammation set up afterwards along the course of the synovial sheaths of the muscles of the fore-arm, terminating in suppuration. The matter was evacuated by a deep incision a little above the wrist. Dismissed cured.

8. T. R., æt. 44, a railway porter, was knocked down by an engine and dragged along the ground by the tender for some distance. On admission, the pinna of the left ear was found completely detached, except at the lower part, where it was suspended by a narrow band of skin. This was divided, and the edge of the skin lining the external meatus stitched to the surrounding textures by a few sutures. There were no head symptoms, and the wound healed readily; the sense of hearing on that side, however, was considerably impaired.

9. R. M'D., æt. 43, admitted 9th June. Was run over by a cart and sustained a severe wound of the left leg. The wound, of an incised appearance, extended along two-thirds of the fibula, exposing the perinæi muscles. The edges of the upper part were brought into close apposition by silver sutures. Healed readily. Dismissed cured, 2d July.

10. P. S., æt. 14, admitted 3d January. While crossing the street he was knocked down and run over by an omnibus. On examination it was found that he had received two lacerated wounds on the inner surface of the upper third of the left leg, separated by a narrow band of skin. There was also a large transverse wound, of a more incised character, crossing the lower part of the thigh of the same limb. The external surface of the leg was considerably bruised, and the fibula fractured at the upper part. The transverse wound in the thigh was brought together by silver sutures, the limb laid in a leather splint, and tepid water dressing applied. The patient was extremely scrofulous, but under constitutional and local treatment, he was finally dismissed cured, 27th March.

11. J. M'K., æt. 12, a printer's boy, was admitted 30th April. His hand and fore-arm having been caught between two cylinders revolving about two inches apart, were severely crushed; while at the same time two large lacerated wounds were inflicted, the one over the olecranon, but not communicating with the elbow-joint, the other along the outside of the arm. The treatment consisted of fomentations to the fore-arm, tepid water dressing to the wound, and small doses of tartar emetic internally. Subsequently, lotions were substituted, and tonics administered. Dismissed cured, 8th July.

12. M. C., æt. 14. Arm caught between two pinion-wheels, which inflicted two rows of narrow, transverse, lacerated wounds along the whole length of the fore-arm. A many-tailed bandage

with tepid water dressing was for some time applied, and subsequently lotions. Cured.

13. W. M., æt. 45, of a melancholic temperament, had on several occasions attempted to destroy himself. On admission, there was found an incised wound three and a half inches in length, running obliquely from the left to the right side of the neck, the centre being immediately below the pomum Adami. The superficial textures were divided, and the thyroid cartilage exposed. Two small vessels which jetted were tied, and the extremities of the wound were then brought into accurate apposition. The patient, after remaining about a month in hospital, was sent out cured.

Remarks.—Even in recent surgical works, a rule is laid down that in primary hæmorrhage no attempt should be made to tie the wounded artery unless it is bleeding. This law is certainly very applicable to small bloodvessels to which there is no direct guide, and which may be generally trusted to nature and compresses. But where the artery is of large size, such as the radial and upwards, there is no security from hæmorrhage without ligature of the vessel; and if from the position and direction of the wound it is suspected that the arterial trunk has been opened into, the incision should be enlarged in the direction of the course of the artery, and a ligature applied, if necessary. Two of the above cases illustrate this modification of the rule,—the one shows the necessity of a careful examination of the wound, and the early application of the ligature; the other indicates the risks arising from delay. In C. C., the wound looked at first sight trifling; it was situated rather low down in the thigh to lead to the suspicion that the femoral was opened into, and but for the blanched appearance of the child, and the mother's statement that there had been a great loss of blood, the real danger might have escaped observation. In order to examine the injury thoroughly, the patient was placed under chloroform. On inserting the finger into the wound, it was found to pass obliquely upwards, and on tracing the lacerated tendon of the adductor, the sartorius was felt divided, and the end of the femoral artery pulsating in Hunter's canal. In addition to this, a large accompanying vein was torn across, and the shaft of the femur was laid bare at the seat of injury. Although under these circumstances there was great liability to gangrene of the limb, it was not deemed proper to adopt severe measures in the first instance, inasmuch as the patient was young, the bruising of textures limited, and there was no great effusion of blood to compress or prevent the collateral circulation. The wound was, therefore, extended in the direction of the course of the main vessel, and one end secured in Hunter's canal; the other, which had retracted into the popliteal space, was followed and tied. The recovery of the patient was uninterrupted and complete; but if the rule stated above had been neglected, there is every probability that on the restoration of the natural force of the circulation, the clot would have been broken down, the hæmorrhage

been repeated, and the already exhausted child have succumbed under the further loss of blood. In the second case, M. P., a wound of the brachial artery, was treated in the country for two weeks with compresses and bandage, but during that time there had been repeated attacks of hæmorrhage which greatly exhausted the patient, and the wound had assumed such an unhealthy appearance that it was impossible to continue the treatment. From the position of the wound over the bend of the arm, and from the occurrence of repeated bleedings per saltum, there could be little doubt that the brachial was opened into. In order to tie the bleeding vessel, the incision was extended, and the infiltrated textures separated by the finger. The round tendon of the biceps was then felt completely divided, and the semilunar fascia entire and stretched; but as the wound passed in the direction of the artery, the fascia was divided, and the lymph over the vessel broken down. After this, when the tourniquet was relaxed, blood was seen to issue from a puncture in the side of the brachial just above the bifurcation; a double ligature was therefore applied above and below the opening. The arm was kept in a flexed position in order to promote the union of the biceps. After this, there was no recurrence of the hæmorrhage. In this patient the operation was much more difficult than in the former, on account of the infiltrated state of the tissues, and the great difficulty experienced both in separating them and in recognising the various textures. Two instances of suspected wound of the palmar arch (J. V., and W. B.), were admitted some days after receipt of the injuries. As the patients were strong men, and little affected by the hæmorrhage, there was no great risk from bleeding, so long as they were under direct observation. Compresses were therefore placed directly over the wound and over the radial and ulnar, and secured by a firmly applied bandage. This, combined with flexion and elevation of the limb, proved sufficient to prevent further hæmorrhage. If bleeding had supervened, it would probably have been impossible to apply a direct ligature to the wounded vessels, and failing this, it would have been necessary to cut down and tie the brachial.

There was admitted a curious case (T. R.) of a lacerated wound detaching the pinna of the ear. The patient recovered without suffering any head symptoms, but the hearing remains considerably impaired on the injured side.

Diseases of the Bones and Joints.

H. M'I., æt. 7. Necrosis of the shaft of the tibia following injury. Several pieces of bone removed. Cured.

A. C., æt. 14, admitted on two separate occasions on account of necrosis of the tibia. The new bone had to be divided before the sequestrum could be removed. Cured.

A. W., æt. 11. Acute necrosis of the tibia. Disease began ten days before admission. Profuse suppuration. Several pieces of bone removed. Cured.

A. M'D., æt. 17. Necrosis of the tibia of six years' duration. Two pieces of bone removed. Cured.

J. S., æt. 16. Necrosis of the lower end of the femur, at one time threatening to involve the knee-joint. Small exfoliation. Cured.

J. W., æt. 19. Necrosis of the ulna. Several sequestra removed. Cured.

J. R., æt. 13. Necrosis of the lower jaw. Sequestra removed. Cured.

W. C., æt. 19. Limited caries of the acromion. Diseased bone removed by the use of the gouge, followed by the application of the red oxide of mercury. Cured.

J. H., æt. 35. Caries of the lumbar vertebræ, sacrum, and illium. Under cod-liver oil, tonics, and good diet, the general health improved. Relieved.

A. A., æt. 10. Limited caries of os calcis. Diseased bone removed by the gouge. Cured.

A. D., æt. 12. Cario-necrosis of the tarsus of both feet. Disease commenced two years ago, but his general health had only recently become affected. Refused to submit to an operation.

Ed. K., æt. 12. Cario-necrosis of the tarsus of both feet. Disease commenced a year before admission. Several pieces of bone removed from the right foot. Constitutional treatment. Lotion to the sinuses. Removed to the country, improving.

Wm. B., æt. 6. Limited caries of os calcis, supervening on injury. Diseased portion removed by the gouge. Cured.

Ann L. Ulceration of the cartilages of the ankle-joint. Cautery. Cured.

Thomas C., æt. 8. Gelatinous disease of the ankle-joint, going on to suppuration. Operation refused.

J. B., æt. 25. Acute synovitis of the knee-joint, with ulceration of the cartilages. The treatment consisted first of leeches, followed by hot fomentations, and the use of the wire splint, and subsequently of blisters, strapping, iodine, and the cautery. Cured.

R. M'G., æt. 18. Strumous disease of the head of the tibia, accompanied with chronic inflammation of the knee-joint. Blisters; strapping; use of the wire splint; cautery. Cured.

C. O'N., æt. 40. Ulceration of the cartilages of the knee-joint. Corrigan's cautery; rest. Cured.

M. H., æt. 26. Anchylosis of the knee-joint in a semiflexed position, accompanied with syphilitic periostitis of the lower end of the femur. Rest; fomentations; iod. potassii. Relieved.

J. B., æt. 24. Knee anchylosed in the flexed position. Refused to submit to operative treatment.

M. M'G., æt. 20. Scrofulous disease of the knee-joint. Abscess over inner condyle. Cavities in the apices of both lungs. No surgical interference. Dismissed *in statu quo*.

R. D., æt. 31. Ulceration of the cartilages of the knee-joint. Rest; actual cautery. Dismissed with the limb in a starched bandage, much improved, and firmly anchylosed.

C. O'D., æt. 9. Gelatinous degeneration of the knee, of three months' duration. Use of wire splint; strapping; bandaging; compound syrup of the phosphates. Cured.

T. B., æt. 20. Chronic synovitis of the knee, which commenced two years before admission. Blisters; strapping; use of wire splint; bandaging; iodide of potassium. Greatly relieved.

R. N., æt. 25, had been treated for acute rheumatic affection of the knee-joint. On admission, a large abscess was found extending along the lower third of the thigh; the patient was very prostrate. The matter was evacuated, and through the opening the finger could be passed into the joint. After this the disorganization of the joint went on rapidly, and the patient sank under the irritative fever.

E. M., æt. 45. Chronic rheumatic arthritis of the hip-joint. Actual cautery applied. Cured.

M. O'D., æt. 4½. Gelatinous degeneration of the knee-joint, of one year's duration. Knee very much flexed. Treatment consisted in the use of the wire splint to straighten the limb, and subsequently strapping with ordinary plaster. Cured.

A. M., æt. 18. Gelatinous degeneration of the knee, of nine months' duration. Under the use of the wire splint, strapping, and iodine, a marked improvement occurred.

J. M'K., æt. 20. Gelatinous degeneration of the synovial membrane, and ulceration of the cartilages of the knee-joint, of six years' duration. A prolonged treatment had no effect in arresting the disease; excision of the joint was proposed, but the patient declined to submit.

J. T., æt. 27. Disease of the shoulder-joint, of five years' duration. Actual cautery. Relieved.

J. C. Necrosis of the shaft of the tibia. Various portions of bone removed. Cured.

J. G., æt. 36. Necrosis of the femur, of fifteen years' duration. Large sequestrum removed. Cured.

E. T., æt. 24, received a punctured wound of the wrist, five weeks previous to admission. The joint inflamed, suppurated, and sinuses formed, through which bare bone could be felt. Treatment consisted in the application of a splint, and the use of poultices and fomentations. Patient, after remaining about a month in hospital, went to the country *in statu quo*.

J. M'D., received a punctured wound of the wrist-joint, from a shoemaker's awl. Acute inflammation of the joint and along the sheath of the tendons, with high irritative fever supervened. The wound was freely enlarged, and several counter-openings made. Recovered, with diminished movement in the joint.

W. T., æt. 50. Thecal bursitis, of several years' standing, and resisting ordinary treatment. Free incision a little above the annular ligament, with subcutaneous division of the latter structure. Cured.

J. W., æt. 30. Thecal bursitis, which had been repeatedly alleviated, but always returned, and now resisted pallative treatment. Treated as above. Cured.

Remarks.—Although five cases of gelatinous degeneration are reported as cured, it can scarcely be expected that the relief will be permanent in most of them, seeing that these patients were all in poor circumstances, and placed in very unfavourable conditions as regards both diet and hygiene. This, combined with their inability to maintain prolonged rest of the limb, almost ensures a recurrence of the disease, although they may have left the hospital apparently cured. Accordingly, most of the cases, in which operative interference was required, had been under observation for many years, and inmates of the hospital on several occasions, until at length the disease had advanced to its last stage, and necessitated either excision or amputation. This is why there are so many operations for the relief of the ultimate effects of this disease in the hospital practice of surgeons, compared with what is found in private life, and hence also the necessity for taking into consideration the patient's condition in life, in giving the prognosis.

The cases of ulceration of cartilage where the disease commenced either in that texture itself, or in the superficial layer of bone, were treated in a most successful and satisfactory manner by repeated applications of the actual cautery; and in one patient, R. D., the disease which had been going on for years was arrested, and firm anchylosis produced. Rapid improvement almost invariably follows the use of the cautery when it is employed early, and in proper cases; whereas it is generally ineffectual when the ulceration is accompanied with the suppuration of either advanced gelatinous degeneration of the synovial membrane, or of strumous caries of the head of the bones. Those patients who are affected with simple ulceration of the cartilages, are generally adults of a rheumatic diathesis, and the most common sites are the knee, hip, or shoulder joints.

E. M. afforded a good example of chronic rheumatic arthritis attacking its favourite joint—the hip. As in general, it commenced in this case, in a patient about middle life, with the ordinary local characters of rheumatism,—namely, a degree of pain and stiffness in the joint, increased at night, and during the prevalence of damp or cold weather. These symptoms had gradually become more marked, until at length the pain was unbearable when the joint was moved, and the patient, unable to sit upright, was compelled to remain in bed so as to maintain the extremity nearly in a direct line with the trunk. On examination, the limb was found shortened; this was no doubt partly due to obliquity of the pelvis, but chiefly to the chronic changes produced in the head and neck of the bone. The muscles of the buttock were found atrophied from the disuse of the limb, but the calf was more muscular than in the opposite extremity,

from the greater degree of force required in advancing the limb. One symptom was present which is almost pathognomonic of the disease, — namely, a peculiar crackling sensation communicated to the hand on rotating the limb. In the diagnosis of this affection, it cannot be mistaken for morbus coxarius on account of the great disparity in the ages of those attacked by these widely different maladies, and also from the generally strong, healthy state of the patients suffering from the former, compared with those labouring under the latter disorder. The only difficulty in the diagnosis arises in those cases where the disease has progressed rapidly in an old patient after a fall on the hip, and where almost the same symptoms have been ultimately produced as after fracture of the neck of the femur. The treatment in E. M. was most satisfactory, much more so than can be expected in the majority of instances of this intractable disease; for after the use of the actual cautery, and the prolonged administration of the iodide of potassium, the pains entirely disappeared, and the movements of the limb were very materially improved.

A considerable number of cases of morbus coxarius occurred in both indoor and out patients; and in all in whom the disease had not gone on to suppuration, the most beneficial effects followed the use of the long splint and the internal administration of cod-liver oil, syrup of the iodide of iron, or other ferruginous tonics.

In the two cases of accumulation of fluid in the synovial sheath of the flexor tendons of the fore-arm, extending under the annular ligament into the palm of the hand, the cyst was laid freely open, and the ligament subcutaneously divided. This permitted the escape of a large number of loose fibro-cartilaginous bodies about the size of millet-seeds. In these cases there were none of the severe constitutional symptoms which frequently occur where division of the annular ligament has not been attended to; neither was there any extensive inflammation of the hand leading to contraction of the palmar fascia. The after-treatment consisted of poultices and fomentations, and the use of the douche and blisters subsequently, in order to get rid of the remaining thickening and stiffness.

Two cases of punctured wound of the wrist-joint occurred, during the session, and they both well exemplify the great dangers, and the disastrous consequences which too often result from this form of injury. The first appeared so slight that the patient could not be convinced of its serious nature, and went about his usual occupation; but within a few days, severe irritative fever set in, along with acute inflammation of the joint and fore-arm, placing his life in imminent jeopardy for several weeks. After a long period, he recovered with the mobility very considerably impaired, and had it not been for the keeping up of passive motion, and the use of the douche, after the acute symptoms disappeared, the joint would have become perfectly anchylosed. The history of E. T. is still

more unsatisfactory, for, after passing through all the dangers of irritative fever and pyæmia, the limb remained in a condition of incurable caries, necessitating amputation.

Fractures of the Inferior Extremity.

Femur—Compound.

W. G., admitted Nov. 25. Died Dec. 16. (Amputation.)
W. M., admitted Dec. 4. Cured March 25. (Condyles split.)
D. P., admitted June 30. Died July 3.
M. I., admitted July 13. Died Aug. (Condyles split.)

Simple.

W. G., admitted Dec. 23. Cured Feb. 11.
M. B., admitted Feb. 17. Taken home March 3. (Fracture of the neck.)
J. W., admitted Feb. 26. Cured April 14.
G. R., admitted Jan. 8. Cured Feb. 22.
W. M., admitted May 12. Sent to poor's-house, June 7. (Fracture of the neck.)

Leg—Compound.

A. E., admitted Oct. 13. Cured Dec. 10.
J. K., admitted Dec. 11. Cured Feb. 1.
W. C., admitted Dec. 30. Cured. (Amputation.)
J. M., admitted March 24. Died March 24. (Several injuries.)
H. O. B., admitted Oct. 19. Cured Dec. 22.

Comminuted.

M. C., admitted Oct. 25. Cured Dec. 1.
G. G., admitted Nov. 11. Cured May 30.
J. L., admitted Jan. 1. Cured Feb. 23.
J. M'F., admitted Feb. 19. Cured April 25.
M. M'A., admitted Aug. 20. Cured Nov. 4.
J. P., admitted Aug. 21. Under treatment, Nov. 1.

Simple.

J. F., admitted Nov. 8. Cured Dec. 18.
M. L., admitted Nov. 13. Cured Dec. 13. (Both bones.)
L. S., admitted Nov. 27. Cured Dec. 24. (Both bones.)
B. K., admitted Nov. 27. Cured Dec. 19.
J. M., admitted Jan. 1. Cured Feb. 2. (Both bones.)
J. D., admitted Feb. 5. Cured March 5.
D. M'K., admitted April 7. Cured May 8. (Both bones.)
F. M'K., admitted May 6. Cured June 4.
J. W., admitted Sept. 10. Cured Oct. 29. (Both bones.)
B. G., admitted Sept. 10. Cured Oct. 29.
H. M., admitted Oct. 13. Cured Nov. 23.
G. G., admitted Aug. 18. Cured Sept. 30.
J. C., admitted Oct. 2. Cured Nov. 29. (Both bones.)

Fibula—Simple.

W. T., admitted Nov. 2. Cured Nov. 27.
M. R., admitted Feb. 19. Cured March 17.
A. C., admitted March 26. Cured April 16.
J. J., admitted June 16. Cured July 13.

D. M'D, admitted Aug. 13. Cured Sept. 10.
G. C., admitted Aug. 14. Cured Sept. 26.
D. K., admitted Sept. 29. Cured Nov. 3.
J. K., admitted Oct. 29. Cured Nov. 5.

The majority of fractures of the inferior extremity were treated as out-door patients; the few who were admitted into hospital were dismissed after a few days' treatment, with one or two exceptions, which will be specially referred to.

Dislocations.

During the session there were three dislocations of the acromial end of the clavicle, two of the elbow-joint, two of the hip, and several of the shoulder.

Remarks.—Among the fractures and dislocations are the following cases worthy of particular notice:—1. J. C., who was admitted into hospital on account of injuries received from a large mass of earth falling on him while he was in a bent attitude. On examination he was found to have all the symptoms of dislocation of the head of the femur on the dorsum ilii, but with less marked immobility than is usual after this form of displacement. There was likewise a considerable amount of bruising about the pelvis and perinæum generally; and the sunken aspect of the patient also indicated lesions more serious than simple dislocation From these circumstances Mr Spence suspected the real nature of the case, although no crepitus could be detected by ordinary manipulation. It was nevertheless deemed advisable to attempt reduction of the limb by pulleys. While this was being done, the rope broke; but on flexing the hip and extending it by manual force, the head of the bone was easily replaced into the socket, and while it was being reduced, distinct crepitus was elicited. A long splint was applied to prevent redisplacement, and a spica bandage to keep the pelvis firm. His water was drawn off with the catheter; it contained blood; but the instrument could be easily passed into the bladder. The symptoms of shock arising from the severe general bruising deepened, notwithstanding the free use of stimulants, and proved fatal three days after admission. On post-mortem examination, the upper portion of the capsular ligament was found torn, and the inferior margin of the acetabulum detached, thus allowing the head of the bone to pass out of the articulation, and occupy exactly the same position as in ordinary dislocation, on the dorsum ilii. In addition to this, there was fracture of the rami of the pubis on both sides, and an enormous quantity of blood effused into the cellular tissue of the pelvis and abdomen; but all the viscera had escaped uninjured.

The second case is that of M. F., who was admitted four weeks after the injury. She exhibited the signs of dislocation of the humerus into the axilla, but with less than the usual amount of flattening under the acromion, and also with a considerable enlarge-

ment of the breadth of the head of the bone. The whole limb from shoulder to palm was completely everted. All these symptoms were no doubt the result of splitting of the head of the humerus, which permitted the external rotator muscles to act unchecked. It was impossible to readjust a fracture of this kind at so late a date; and accordingly the treatment was limited to keeping up a certain degree of passive motion, so as to prevent complete anchylosis of the joint, and atrophy of the muscles.

An instance of the oblique fracture of the body and spine of the scapula presented itself in a man, R. D., who was struck on the back by a piece of the brickwork, encasing a boiler, which burst near him. The treatment, which was perfectly successful, consisted in adjusting the limb in the same way as for fracture of the clavicle, but with the addition of a broad hernia bandage round the upper part of the chest. It is curious to observe that three examples of dislocation of the acromial end of the clavicle were admitted during the session. Two of them, which were recent, were treated in the recumbent posture, in exactly the same manner as ordinary fracture of the clavicle. When at the end of a fortnight the patients were permitted to rise, the adhesions which had formed were so firm as to prevent all tendency to return of displacement. One case (G. G.) of ununited fracture of the tibia presented itself. It resulted from a severely comminuted fracture of the leg, produced by the direct stroke of the paddle-wheel of a steamer in motion. The mode of treatment first adopted, and which was afterwards persisted in for several months, consisted in placing the limb at perfect rest by means of starch bandages, and at the same time giving the patient nourishing diet, combined with small quantities of stimulants. This treatment, however, was only partially successful; and as the amount of mobility had remained unaltered for some time, a thick needle was passed between the fragments, the ligamentous union thoroughly destroyed, and the limb afterwards adjusted in plaster of Paris. On taking it down, at the end of six weeks, it was found to be perfectly firm. It is questionable whether this mode of treatment would be sufficient for the cure of flail-like false joints, but it is generally effectual in cases like the preceding, where only a certain degree of mobility remains, though quite sufficient to render the limb useless to the patient.

As a somewhat remarkable instance of recovery after a severe injury by direct violence, may be mentioned the case of J. M., who sustained a compound fracture of the femur, immediately above the condyles, accompanied with splitting of the condyloid portion into the articulation. The wound only communicated indirectly with the joint; and as it was situated on the posterior aspect, and was of no great size, while the surrounding textures were comparatively little bruised, and also as the patient was in robust health, it was thought proper to try and save the limb. It was accordingly placed in a M'Intyre's splint in the straight position, with a long splint on the

outside, and cold constantly applied to the joint. A long-continued suppuration, high irritative fever, and the formation of several abscesses in the neighbourhood, followed; but ultimately the patient recovered, and was able to stand and walk at the end of four months. The knee-joint, at the date of dismissal, was perfectly stiff.

Urinary Cases.

Lithotomy.

J. S., æt. 22, remarkably small and stunted, had suffered from stone in the bladder for fifteen years. At the date of admission he laboured under renal disorder, cystitis, and also complained of great pain when direct pressure was made either over the right iliac region or perinæum. The genitals were very large and extremely vascular. As the only chance of life depended on the early removal of the calculus, and as the patient was very anxious to have the operation performed, two large calculi were removed by the lateral incision. For a few days he went on well and made plenty of water; but symptoms of inflammation returned on the fourth, and he died on the sixth day. On post-mortem examination a large abscess was found in the right iliac fossa and around the bladder, between the peritoneum and pelvic fascia; the left kidney was completely atrophied, and the right riddled with abscesses. There was no sloughing in the course of the wound, or any sign of extravasation of urine.

G. C., æt. 80, suffered extremely from symptoms of stone in the bladder for six months previous to admission. A small calculus was removed by the lateral operation. The wound sloughed, and healed slowly; but finally the union was complete, and the whole of the urine was passed through the natural channel. After this, on the patient being raised out of bed, his legs were found unable to support the weight of the body; he was therefore compelled either to recline on bed, or sit propped upon a chair. The general weakness increased, and from the constant pressure on the back, a large portion of the skin over the sacrum sloughed. Thereafter, notwithstanding the constant care of the nurse, sloughs formed over various prominences; and under the discharge from these sources, he sank three months after the date of operation.

D. H., æt. 61, admitted with the usual symptoms of a vesical calculus. The sound was passed twice previous to the operation, and on each of these occasions there was a succession of rigors; the pulse rose, and for a day or two there was considerable disorder of the general health. On account of the persistent acceleration of the pulse, the furred tongue, and the general feeling of sickness, the operation was long delayed; but as the vesical symptoms were on the increase, and as the patient was anxious for the chance of obtaining relief, a large calculus was removed by lateral lithotomy. A few hours after the operation, blood was seen constantly dropping

from the orifice of the tube, while at intervals a larger quantity was expelled, mingled with clots. Notwithstanding different kinds of local treatment, the hæmorrhage continued unchecked; and, under the loss of blood and shock, he died on the third day after the operation.

Perinæal Section.

1. W. M., æt. 50. Stricture of the urethra, of twenty years' standing, complicated with an abscess in the perinæum. The abscess was freely opened, and one of the smallest probe-pointed grooved staffs passed into the bladder. Upon this the stricture was sufficiently divided to enable Mr Spence to introduce a larger-sized instrument and complete the section. A No. 8 catheter was then tied into the bladder. The patient recovered without an unfavourable symptom.

2. T. M., æt. 34, has for several years been accustomed to pass his water in a very small stream, and has often had attacks of retention, requiring the catheter to relieve them. On the morning of admission, he had difficulty of micturition, but, after prolonged efforts, a small quantity escaped by the natural canal, and he felt relieved. Shortly thereafter, however, the perinæum and scrotum became swollen, and feverish symptoms set in. A grooved staff was passed and the stricture divided; free incisions were at the same time made in the scrotum. The usual after-treatment was enforced; the patient went on most favourably, and was dismissed cured.

3. C. M'N., æt. 45, was admitted with retention of urine, for the relief of which attempts had been made to pass instruments without success. He was placed in a warm bath, and while in it made water. About six hours afterwards, he again felt intense desire to micturate, but was unable to do so. As only the smallest catheter could be introduced, and little water escaped through it, a grooved staff was passed into the bladder, and the patient was requested to renew his efforts while the staff was being withdrawn. With this assistance he passed a small quantity of water. After a few hours, however, he exhibited general signs, which might be either attributed to uræmia or to extravasation of urine. Under such circumstances it was essential to introduce a larger catheter, and as this could only be done after urethrotomy, the operation was performed. There was very little water in the bladder, and none escaped through the catheter during the few hours which he survived the operation. On examination there was no trace of extravasation of urine; the cavity of the bladder was much diminished, and the walls thickened; the kidneys were very much congested.

4. H. C., æt. 50, admitted 14th September, had suffered for ten years from stricture of the urethra, accompanied with occasional attacks of retention. During four days previous to admission, the micturition was difficult, and accompanied with pain in the perinæum

and thighs. On examination, the perinæum, scrotum, penis, and lower part of the abdomen, were found swollen and the glans discoloured. A free incision was made in the raphe of the perinæum; the matter which escaped consisted of pus and urine. A grooved staff was immediately passed into the bladder, the stricture divided, and a gum-elastic catheter introduced. Free incisions were then made in the infiltrated textures, and charcoal poultices applied. Although stimulants were liberally given, in order to rally him, the prostration nevertheless deepened, and he died on the fourth day after admission.

Hydatid Cyst.

J. F., æt. 55, a native of Yorkshire, was admitted August 23, suffering from retention of urine, to fits of which he had been liable for the previous eight months. On this occasion, several unsuccessful attempts had been made to relieve him before sending him to Mr Spence, who, on examination per rectum, detected a large fluctuating cyst in the recto-vesical fossa, and as the curvature of the urethra was thus increased, he selected a prostatic catheter, and introduced it without much difficulty. A large quantity of water was drawn off, but the cyst, which at first was thought to be a dilated portion of the bladder, underwent no diminution in size. This proved its independent origin, and as the man was in apparently good health, and had never suffered from inflammatory symptoms in the pelvis, and as there was an indistinct feeling of a tumour deep in the right hypochondrium, it was thought probable that this was an instance of a hydatid cyst in a very uncommon situation. The patient was kept under observation, and the water regularly drawn off. At the end of a fortnight, the cyst was tapped by a curved trochar introduced per rectum. A considerable quantity of clear fluid escaped, in which, both on ordinary visual, and in microscopic examination, numerous hydatids were detected. The discharge from the rectum continued for a few days and then ceased. The cyst refilled, but while the patient was making efforts at stool, it burst; the fluid was again submitted to the microscope, and was found to contain the shreds of broken down acephalocysts. For a short time discharge continued to be passed of a purulent character, but this gradually diminished, and ultimately disappeared, leaving only a degree of hardness in the position formerly occupied by the cyst. At the date of dismissal (10th October), the deep-seated swelling in the hypochondrium had become much more perceptible to the touch. It could then be defined as a small tumour, about the size of an orange. On his returning about a month afterwards, it had attained the size of a melon, and on his again presenting himself, at the end of two months, it filled nearly the whole of one-half of the abdomen.

Remarks.—There will be found in this report the first fatal cases

of lithotomy which have occurred in Mr Spence's hospital practice. One of the patients (G. C.), who was 80 years of age, and fatuous, suffered severely from the symptoms of stone in the bladder. The calculus was small, and in a younger person might have been crushed with the lithotrite, but in old men, where the third lobe of the prostate is enlarged, it is very difficult to seize the stone, and the detritus, prevented from escaping, is apt to form the centres of new calculi. In this patient, the operation was easily performed, the calculus being readily removed by the scoop; the wound healed slowly, but ultimately the cure was complete. As a probable cause of the sloughing in the wound and afterwards in the back, it may be mentioned that shortly after the operation, an epidemic of hospital gangrene broke out in the wards and attacked the wound in G. C. His general system was so much weakened, by the extensive sloughing, that he was incapable of rallying from the great depression of the vital powers which is invariably associated with hospital gangrene. He, however, so far recovered, that the wound was perfectly whole, and the urine passed entirely per urethram, for more than a month before his death. Previous to lithotomy being performed on J. S., it was evident, from the irritative symptoms and from the extreme pain felt when pressure was made on the hypogastrium or right ilium, that he suffered from inflammation of the bladder, and surrounding cellular tissue. Also, the general impaired state of his health, the pain in the back, the large quantity of pus in the urine, which was frequently acid and almost of normal specific gravity, without any great excess of albumen, combined with a history of fifteen years of suffering, showed that he laboured under pyelitis. The only chance of relieving these very unfavourable symptoms, was by first removing their exciting cause, and then attempting to allay them by appropriate remedies. Lateral lithotomy was therefore performed shortly after his admission; for a few days he improved wonderfully, but the inflammatory affections which at first seemed subdued were rekindled, and he sank. There was present in this patient a symptom which is not described in books, and which was only explained at the time of the operation. He had long suffered from intense deep-seated pain when pressure was made on the perinæum; this was found to arise from the presence of two vesical calculi placed directly over each other, the superior one being driven against the inflamed and hypertrophied bladder whenever the shallow perinæum was pressed upwards. The third patient, D. H., was also a very unfavourable case for operative interference, from his general health being greatly impaired, and from the intense irritative symptoms that were wont to follow the introduction of the sound. After the operation was performed, a passive hæmorrhage came through the tube, and was unchecked by all those means which usually suffice to control bleeding from the veins of the prostate. As a post-mortem examination was refused, it was impossible to determine the source of this hæmorrhage; but it is highly probable that it was renal, or from the interior

of the bladder, seeing that the blood was equally mixed with the urine, and always came through the tube. Besides, for a long time he had been accustomed to pass those sanguineo-fibrinous casts which are so characteristic of renal hæmaturia.

The complications accompanying the cases of stricture rendered urethrotomy preferable to dilatation or splitting. In two of the patients there was extravasation of urine, and in a third an abscess, both of which conditions necessitated the making of incisions in the perinæum; by prolonging these a little deeper, the strictures could be divided. In T. M. the infiltration of urine had just begun, and the necessary treatment was successfully enforced; but in H. C., the vitality of the textures was destroyed, as was indicated by the state of the glans penis, and the chances of recovery were almost *nil*. C. M'N. deserves particular notice, because, until after the operation, it was doubtful whether this patient suffered from retention and extravasation, or from uræmia. He had been for years troubled with a tight stricture of the urethra, and on the evening before admission had been unable to micturate. He felt all the symptoms of retention, although the bladder could not be detected in the hypogastrium, yet, as a small quantity of water will produce this feeling in a hypertrophied viscus, and also because only the smallest catheter could be introduced, which gave no definite information, Mr Spence considered it essential under such circumstances to perform urethrotomy, in order to pass a full-sized instrument into the bladder. When this was done, the viscus was found almost empty. The true nature of the case was then evident, and measures were directed towards bringing about the secretion of urine; but the kidneys never responded, and a fatal issue speedily supervened.

The case of hydatids is interesting from the rarity of this affection in Scotland; from the symptoms leading to a correct diagnosis of its nature; and from the effective treatment without any tendency of the inflammation of the cyst to spread to adjoining organs. The rapid growth, too, of the hepatic tumour has been noted from its outset, and the question of its treatment will shortly require to be decided.

Hernia.

1. M. M., æt. 37, admitted 31st October, on account of a strangulated femoral hernia which had been down thirty-six hours. She had suffered considerable inconvenience from it during the preceding nine years, but it could always be easily reduced. This time, however, the taxis failing, the patient was placed under chloroform, and the usual operation performed. The wound healed slowly. Dismissed, 3d December, cured.

2. M. C., admitted 5th November, had suffered from femoral hernia for eight years, but could always reduce it, up to the 28th October. On that occasion, her own attempts failing, she sent for a medical man, and, after repeated efforts, he also was unable to

replace the bowel. On the 30th, she began to vomit, and on the 3d November, the ejected matter had a feculent odour. On admission the tumour was found tense and painful, the patient exceedingly prostrate, and the pulse quick. With such symptoms, as an operation was imperative, it was without delay performed in the usual manner. When the bowel was exposed, it was seen to be very dark, congested, gangrenous-looking, and, after carefully pulling it down so as to exhibit the constricted portion, a small perforation was detected at the point of greatest pressure. The bowel was laid freely open, moderately warm poultices applied to the wound, and an opiate administered. On the 9th November, she complained of the usual symptoms of peritonitis, and of this she died on the 11th.

3. B. S., æt. 62. Strangulated femoral hernia, which had been down twenty-four hours. Under chloroform, the taxis failing, the extra-peritoneal operation was performed. Cured.

4. E. M'M., æt. 19. The hernia had been often down during the previous six years, but could always be easily reduced up to the morning of admission. The taxis was carefully tried after the patient was completely under the influence of chloroform. It was, however, of no avail, and an operation was had recourse to. The sac contained a large quantity of dark-coloured fluid, with a small knuckle of highly-congested bowel projecting through the femoral canal. Cured.

5. T. W., æt. 65. Strangulated inguinal hernia; bowel down three days. On admission this patient had feculent vomiting, hiccup, and other signs of long-continued strangulation. He nevertheless would on no account submit to an operation. As the patient evidently was mentally deranged, it was determined to send for another surgeon, and, if he deemed an operation necessary, to perform it without the patient's sanction. While the state of the tumour was being re-examined, the pressure of the manipulation forced the bowel back into the abdomen. The constitutional symptoms continued, and he sank on the fourth day. On post-mortem examination the portion of bowel which had occupied the hernial sac was found to be dark and gangrenous, and at one point perforated; there were also evidences of general peritonitis.

6. J. B., æt. 34. Strangulated inguinal hernia, which the taxis under chloroform failed to reduce. Operation. Cured.

7. J. M. Strangulated inguinal hernia. The bowel in this instance was only down a few hours, but the general constitutional symptoms were well marked. The tumour had become tense and red, and the taxis failed. Operation. Cured.

Remarks.—The subject of hernia has been so fully discussed in the preceding reports as to render it merely necessary to indicate here, in how far these seven cases corroborate the general views formerly expressed. The operation was performed in five of the cases immediately after the well-applied taxis with adjuvants had

failed, and in all these instances it proved perfectly successful. Both the examples of inguinal hernia were congenital, and as the stricture was situated in the thickened neck of the sac (the canal of Nuck), it was absolutely essential to open this structure before effecting the reduction of the contents. Again, in the cases of femoral hernia, the extra-peritoneal operation was performed on B. S., while in E. M'M. it failed on account of the stricture being in the neck of the sac itself. The former method of operating is preferable where the patient is seen early, and where the contents can be easily reduced while the sac is temporarily retained, so that there is a certainty of there being no further constriction at its neck, and in these cases the incisions cannot superadd danger to the taxis, inasmuch as only superficial textures are divided. The two remaining cases illustrate the risks arising from delay. When the sac was opened in M. C. the bowel was observed to be gangrenous, but no perforation was visible until after gently pulling down the gut and exposing the part which had been directly constricted, and which is always the first to give way. As there was a small opening at this point, the stricture was freely divided, the bowel left unreduced, and moderately warm poultices applied. At the end of a few hours, when sufficient lymph had been thrown out to bind the intestine to the abdominal wall and prevent the regurgitation of fecal matter, it was laid freely open. Under such circumstances there was little hope of the patient surviving long. Peritonitis had set in previous to the operation, and she sank within a few days under its more fully developed symptoms. In T. W. the bowel was, no doubt, in a similar condition. Mr Spence, in this case, did not attempt the taxis, as the only chance of recovery, though a feeble one, depended on the laying open of the sac and permitting the contents to escape externally. While, however, the tumour was being examined by another surgeon, it went back into the abdomen. This accident is very liable to happen in advanced cases where the bowel has become gangrenous and flaccid; but it ought, as far as possible, to be guarded against, as extravasation of fecal matter into the peritoneal cavity must then ensue, and this is invariably followed by a fatal result.

Miscellaneous.

M. W., æt. 6, suffered the loss of nearly half the upper lip and a portion of the left cheek, from an attack of cancrum oris following on measles. On admission, a firm cicatrix had formed at the upper part, while, below, the gum was left exposed. When the patient's health was completely restored, Mr Spence determined to perform a plastic operation, and this was done in the following method:— The firm cicatricial tissue was first carefully removed, the attachments of the cheek to the maxilla were then separated, and, in order to allow the two widely-separated margins to be brought together, an incision was carried directly outwards from the angle

of the mouth. The edge of the cheek and lip were then brought together, and the sides of the latter incision opposite the mouth were stitched together so as to form a lower margin to the new upper lip. The wound healed readily, and though for some time the side of the cheek looked tense, the tissues have gradually relaxed and filled up, so that the child is now quite comely in appearance.

J. W., æt. 10, sustained an injury about the elbow-joint several years before admission. On taking the limb down she says that it was flexed at the wrist, and has remained so ever since. The flexors of the carpus were subcutaneously divided, and the limb extended on a splint. Passive motion was thereafter kept up, and, after a time, douches and galvanism employed to stimulate the muscles to contraction. On dismissal she could flex and extend the wrist, but with no great force, on account of the atrophied state of the whole muscles of the forearm.

PRINTED BY OLIVER AND BOYD, TWEEDDALE COURT, EDINBURGH.